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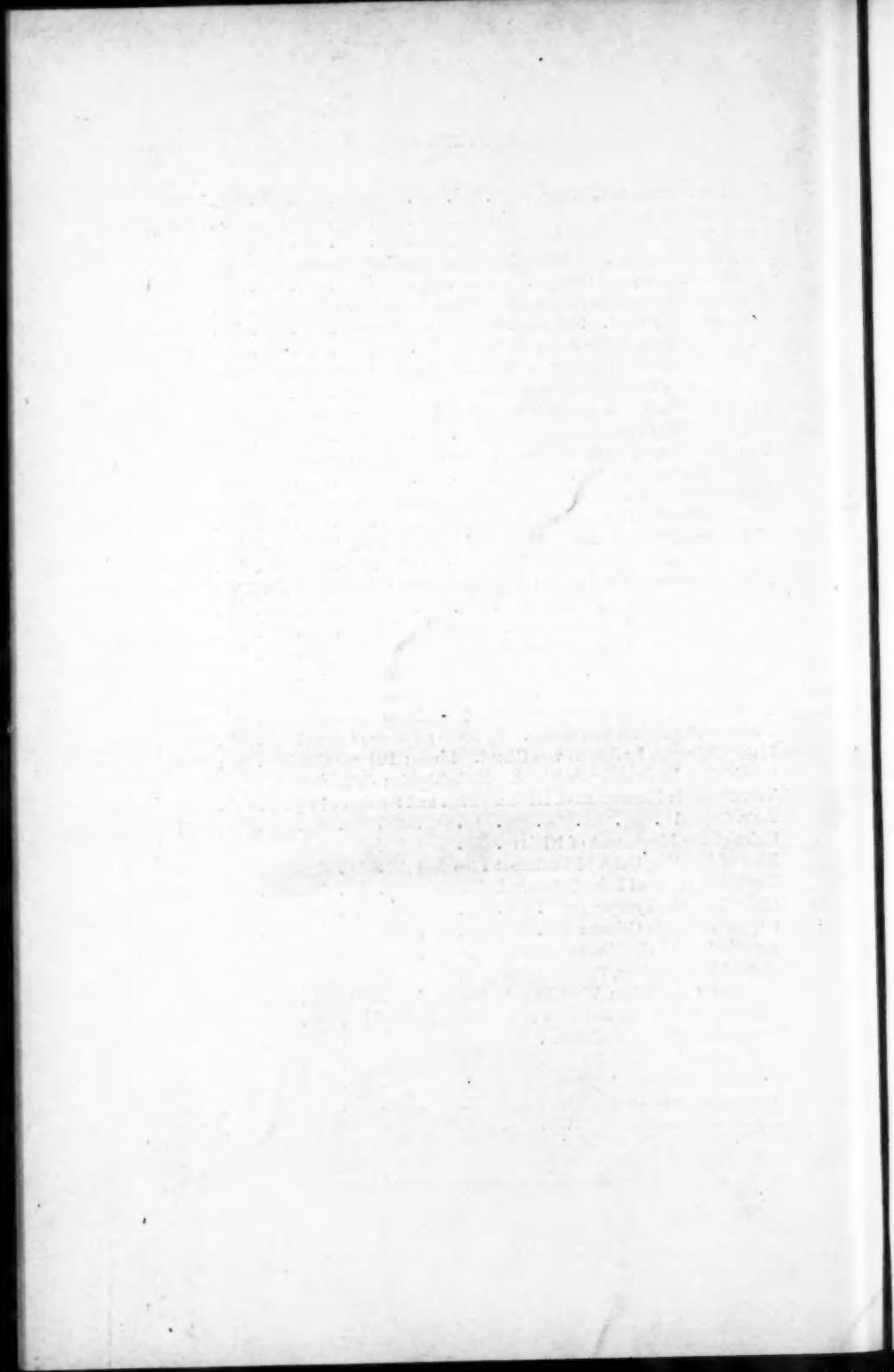
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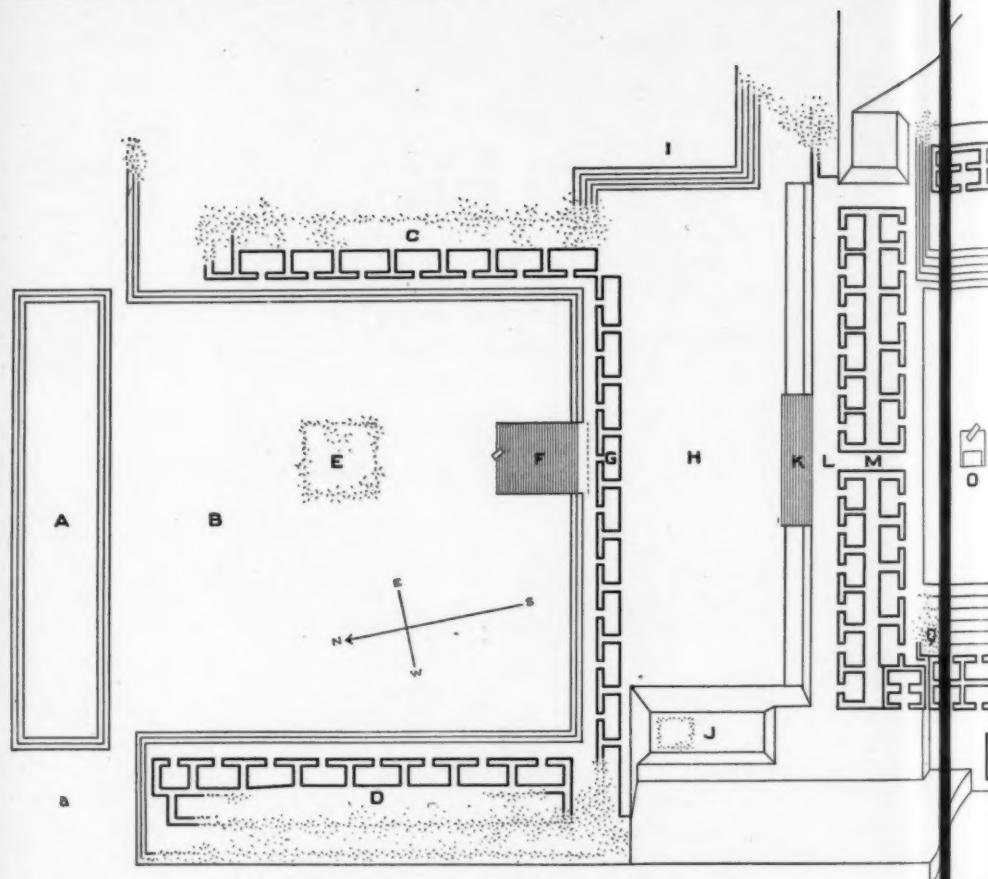
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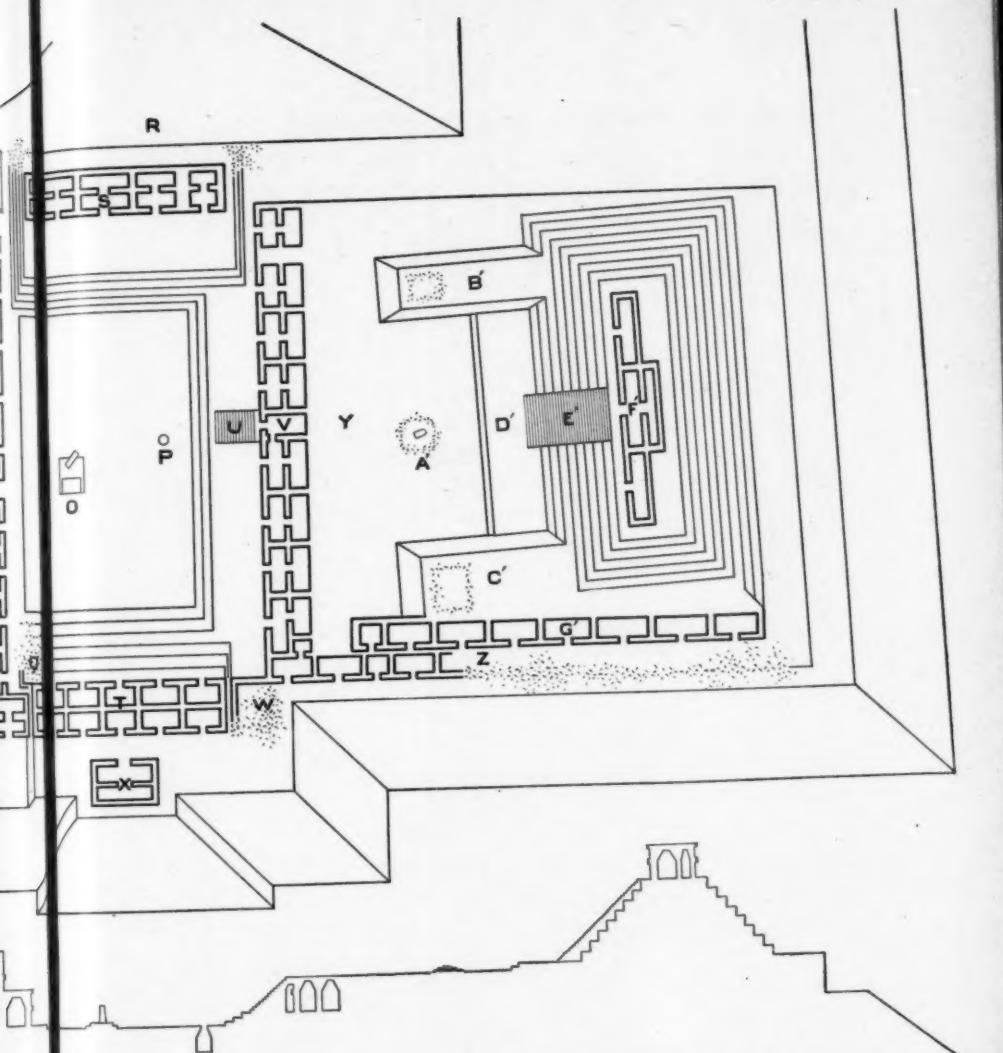
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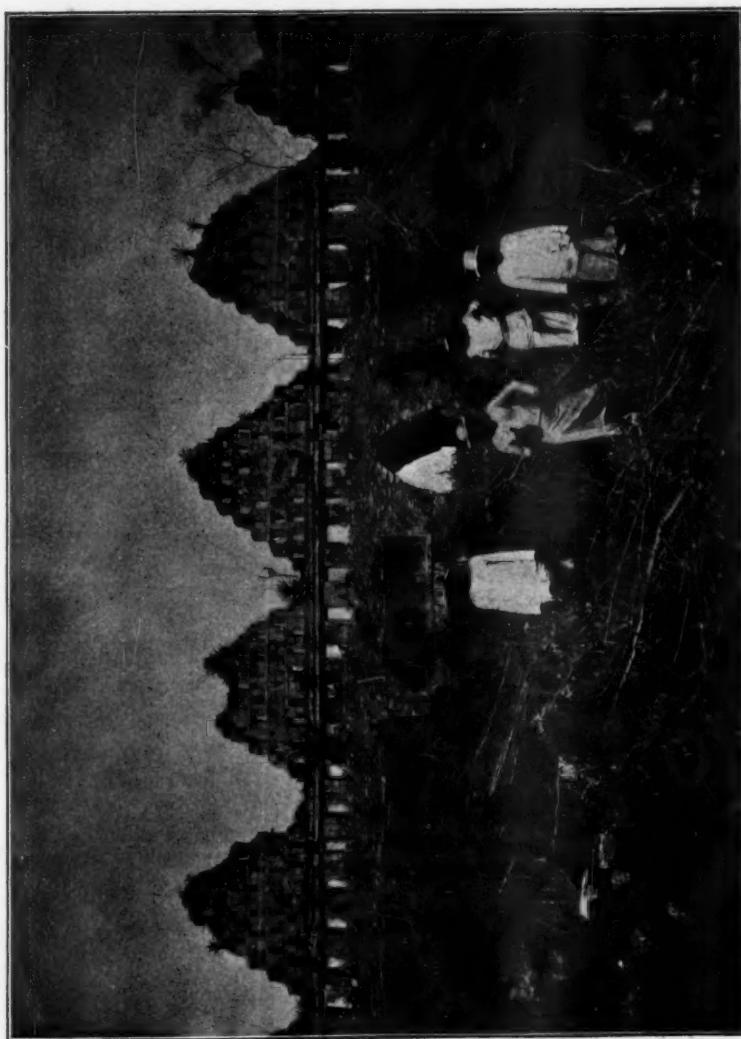
a. MAP OF THE SOUTHWEST GROUP, UXMAL.

ROSS



CROSS-SECTION OF THE SOUTHWEST GROUP, UXMAL

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THE HOUSE OF THE PIGEONS (STRUCTURE M), UXMAL

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A GROUP OF RELATED STRUCTURES AT UXMAL,
MEXICO

[PLATES I-II]

THE ruins of Uxmal in the state of Yucatan, Mexico, have long been known to the scientific world in a general way, but excepting the heart of the site, which was somewhat roughly mapped by Stephens and later by Holmes, the actual extent of this important group is as unknown to-day as at the time of the Spanish conquest. Indeed, to survey and map the entire site, which is one of the most extensive in the whole region covered by the Maya culture, and give to it a detailed study, is rather the work of large scientific institutions, operating for a term of years, than of the individual with but a single field season at his disposal.

The scope of the present paper, therefore, is by no means comprehensive. The object has been to describe as fully as possible without excavation a single group of buildings, which, by the arrangement of its several parts, seems to constitute a very definite unit of assemblage, and, in the case of the group chosen, probably a religious unit as well.

The group herewith presented lies southwest of The House of the Governor and west of The Great Pyramid (*R*, PLATE I *a*). Such, however, is the luxuriance of the vegetation here, that only its two highest members, The South Pyramid and The House of the Pigeons, are visible from the other eminences of the city, all else, terraces, courts, and quadrangles, being hidden by a riot of vines, creepers, and dense tropical foliage. On every side the bush has effectually reclaimed its own. This group is composed of two quadrangles and a terminal pyramid (*B*, *N*, and *F'*, respectively, PLATE I *a* and *b*), and two platforms (*H* and *Y*, same plate), which separate the above

from each other. These five divisions, and the units into which each may be resolved, conform very closely to the same long axis, all lying approximately in the same north and south line.

The chief entrance and direction of approach is from the north. This fact is established in several ways. First, the substructures, which support the various buildings of the group, increase in height above the level of the ground from north to south. (See the partly restored cross-section in PLATE I *b*.¹) This progressive increase in height from north to south necessitated the placing of all four of the stairways at the south sides of the respective courts or terraces from which they rise (PLATE I *a*), which indicates that approach is from the north only.

Again, the high-stepped pyramid at the southern end of the group has no stairway on its southern slope. This precludes the possibility of entrance from the south side, and when taken together with the fact that the long axis of the group is north and south and that all of its members lie north of this terminal South Pyramid, it is clear that entrance can be from the north only.

Approaching from this direction, a long low promenade (*A*, PLATE I *a* and *b*) is crossed, which is the north member of the first or North Quadrangle *B*. This promenade is 225 feet long east and west, 45 feet wide, and rises 3 feet above the level of the ground. It was mounted by three steps, originally running around all four sides, but now only to be traced in a few places. At its western end it does not appear to have ever joined the terrace supporting the West Range of this quadrangle (*D*, PLATE I *a*), and probably its eastern end also stands clear of the terrace supporting the East Range (*C*, PLATE I *a*), though the relationship in this corner is less clear. The top is quite level, and although much fallen masonry is scattered about, there is hardly enough to warrant the assumption that stone structures had ever stood here. This low promenade without anything to interrupt the vision is a fitting entrance to the group. Standing upon it and looking south, the different buildings of the succeeding quadrangles can be

¹ The cross-section here presented was so taken as to pass through all four of the stairways.

seen rising one above the other until the lofty temple surmounting the South Pyramid catches the eye and holds it, the last and highest member of the assemblage, and, we may well believe from the importance of its position, the sanctuary. The formality of the long approach, the increasing elevation of succeeding members, and, finally, the extreme prominence of its location would seem to indicate that in the case of this temple we are dealing with a place of no less importance than the supreme sanctuary of the group.

Descending the three steps of the north platform, the court of the North Quadrangle (*B*, PLATE I *a* and *b*) is reached. This is an area 230 feet square. Somewhat east of its centre and due north of the first stairway (*F*, PLATE I *a* and *b*) is a shapeless mound of fallen masonry *E*, which probably was one of the low rectangular platforms found in the centres of all courts throughout the city. Each one of these originally seems to have supported a monolith usually from 2 to 3 feet in diameter and 5 to 7 feet high, called by Stephens the "picote."¹ The picote of this particular platform is missing, though a fragment of its base was found 50 feet south at the foot of the first stairway (*F*, PLATE I *a* and *b*). It is $2\frac{1}{2}$ feet in diameter and has two intertwined serpents sculptured around its base. The use of these cylindrical monoliths is unknown. Stephens, *Incidents of Travel in Yucatan*, vol. I, p. 182, says that the Indians called the large stone shaft, or column, on the terrace in front of The House of the Governor "the picote," or whipping-post, though no reasons for this identification are advanced. The association of these monoliths with the custom of flagellation in the absence of more definite traditional proof seems hazardous, particularly since there is to be found in the Usamacinta region, the habitat of a Maya culture older than that of Yucatan, a logical prototype for them. The writer refers to the stone *stelae*, or sculptured monoliths, which occur in front of buildings and pyramids throughout the Usamacinta area, and which reach their highest development in the elabo-

¹ The picote in front of The House of the Governor is considerably larger than this, reaching a height of 8 feet above the ground and a diameter of 5 feet at its base. Such dimensions, however, are unusual, and indeed, so far as known, occur nowhere else in the city.

rately sculptured monuments of Copan and Quirigua. These monoliths at Uxmal may well be a degenerate expression of the same idea which gave rise to the *stelae* of the older area. Such an identification, at least, seems more reasonable than the association of these monoliths with the custom of flagellation in the complete absence of supporting traditional evidence. Every court as mentioned above seems to have been provided with one. Sometimes they are completely covered with elaborately sculptured serpents or hieroglyphs, and again others are perfectly plain.

The three ranges of rooms surrounding the north court on its east, south, and west sides (*C*, *G*, and *D*, respectively, PLATE I *a*) do not rise directly from the level of the ground, but stand upon a low terrace some 3 feet high, reached by as many steps. These ranges, as well as all the other structures of the group, are of one architectural type: the Maya arch, which was employed not only here, but also throughout the whole region covered by the Maya culture to the exclusion of every other method of construction. Indeed, it would almost seem that this gifted race knew of no other than that of the false arch which they applied universally. Maya structures are built of rubble encased with a veneer of dressed stone, which was applied before the rubble hearting had set. This veneer or surface facing is in reality nothing more than a great mosaic, serving no structural function. In many buildings large sections of it have fallen off without disturbing in the least the solidarity of the rubble hearting. Rooms are roofed with steep false arches let into this rubble hearting (*G*, *M*, *V*, and *F'*, PLATE I *b*). These are faced like the exterior and interior walls with a veneer of dressed stone. As no provisions for superimposed weight other than human, a negligible quantity at its maximum, had to be made, the cohesive strength of the rubble alone was more than sufficient to support this false arch, though the width spanned is necessarily limited, rarely exceeding more than 10 or 12 feet.

Returning to the North Quadrangle again, the East and West Ranges *C* and *D* are found to be in an advanced state of ruin. Originally each was composed of two non-communicating series of rooms, one behind the other, in each case the series fronting

upon the court being better preserved than the outside series (*C* and *D*, PLATE I *a*).

The rooms of these interior series, where it was possible to measure them, vary from 14 to 22 feet in length and from 8 to 10 feet in width. All are uniformly 18 feet high. The middle walls of these two ranges contain no openings, and consequently all rooms had to be entered through exterior doorways.

The southern end of the East Range *C* is built against the eastern end of the South Range *G*, the corner thus formed appearing quite clearly in spite of the widespread ruin here. It is probable that the southern end of the West Range *D* also was similarly attached to the western end of the South Range in former times, but débris is now piled so high in this corner of the court that it would be impossible to trace the ground-plan without extensive excavation.

The remaining side of the North Quadrangle (*G*, PLATE I *a* and *b*) is the most interesting. It is composed of a single series of nine rooms built against the artificial terrace in front of The House of the Pigeons (*H*, PLATE I *a* and *b*). Entrance could only be effected by doorways in the north wall, as the south wall was built against the solid rubble terrace *H*. All the rooms are badly demolished. The average length east and west is 21 feet. The width is 8½ feet. Walls are 2 feet thick.

The façades of all three of these ranges, *C*, *D*, and *G*, have collapsed, and without excavation it is impossible to say whether their upper zones had been sculptured or not. Judging from the other members of the group which have retained their façades, all were probably quite plain, barring of course the ever-present triple-member cornice which appears on the vast majority of Maya façades, dividing them horizontally into two zones. The platform *H*, which extends over the rooms of the South Range *G*, is 18 feet higher than the court below.

It is reached by a stairway (*F*, PLATE I *a* and *b*) 33 feet wide, the steps of which probably had a tread of about 18 inches and a rise of 8 or 10 inches. This stairway has now completely collapsed, but there are ample proofs of its former existence on every side.

Unless measures had been taken to prevent, the building of

this stairway would have blocked the entrance of the room over which it passed (PLATE I *a* and *b*). That the ancient builders, however, foresaw and forestalled this contingency seems probable from the fact that they satisfactorily overcame the same difficulty not only in other cities of Yucatan, Chichen Itza and Kabah, but also in other buildings here at Uxmal. In the House of the Dwarf, for example, a half arch was built underneath the stairway, which ascends the western slope of that pyramid, having for one of its sides the exterior wall of the room or rooms that the stairway otherwise would have blocked. These rooms open directly into the passageway thus formed, which in turn leads to the outside. There seems to be a fragment of a similar construction (*i.e.* the half arch) (*U*, PLATE I *a* and *b*) still adhering to the South Range *V* of the South Quadrangle in front of the room over which the third stairway *U* passes. Doubtless the same thing was present under the first stairway *F*, though the half arch in this latter case has given way completely and wrecked the steps above. This satisfactorily accounts for the greater demolition of *F* and *U*, the first and third stairways, where these half arches were necessarily present, than of the second and fourth, *K* and *E*, which were much better preserved because of the absence of this element of weakness. These half arches below the first and third stairways have been restored in the cross-section (*F* and *U*, PLATE I *b*).

Passing up the first stairway and out of the Court of the North Quadrangle, the broad platform (*H*, PLATE I *a* and *b*) in front of The House of the Pigeons is reached. This is 270 feet wide east and west and 88 feet deep. It is devoid of any kind of structure except for a mound (*J*, PLATE I *a*) running across its western end. The summit of this mound is slightly higher than the terrace *L*, and originally had supported a building of some sort, only the ruins of which now remain. The eastern end of the platform terminates in a broad stairway leading to the area (*I*, PLATE I *a*) just north of the Great Pyramid *R* and the range of rooms at its northern base. The south side of this platform *H* is an almost vertical wall of faced masonry 9 feet high, which forms the north retaining wall of the terrace *L*. Three human figures drawn to scale have been

introduced in the cross-section (PLATE I *b*) upon this platform *H* to give an idea of relative size.

The second stairway *K*, which rises from the south side of platform *H* is 60 feet wide. It is composed of ten or twelve low, deep steps, and leads to the narrow terrace *L*, extending along the entire front of The House of the Pigeons. The structure thus fancifully designated is one of the most imposing in the city. Its name is derived from the curious form of the roof-comb,¹ which rises in nine triangular extensions, each pierced with many rectangular openings. In the accompanying illustration (PLATE II)² only the five middle ones appear. The resemblance of these extensions and their window-like apertures to dove-cotes suggested the name "House of the Pigeons," which Stephens first applied to this structure.

This building (*M*, PLATE I *a* and *b* and PLATE II) is 232 feet long east and west, 32 feet wide, and, including the roof-comb, 35 feet high. It is composed of two series of rooms, a northern and southern, interrupted by an arcade passing through the middle of the building, which appears in PLATE II, and a small annex at the southwest corner containing two rooms, the long axes of which are north and south like that of the arcade, or at right angles to those of the other rooms. This arcade is 32 feet long (the width of the building) north and south, $9\frac{1}{2}$ feet wide, and $13\frac{1}{2}$ feet high. It opens directly into the Court of the South Quadrangle (*N*, PLATE I *a* and *b*) and affords passageway from the North Quadrangle to all structures of the group south of it.

¹ The roof-comb is a common feature of Maya architecture, and occurs throughout the Usamacinta region, as well as in Yucatan. It consists of a wall sometimes 15 feet or more in height built upon the roof of a structure. Except that it is always parallel to the long axis of the building it surmounts, the position of the roof-comb varies. It may stand directly over the back, middle, or front of the building or at any intermediate point. This roof-crest, as it has been called by some, passes through an interesting development. In the earlier forms, as at Tikal, Guatemala, it consists of a solid wall, to support which masonry buttresses were built inside of the building directly beneath the superimposed weight. Later, as here at Uxmal in The House of the Pigeons, this solid wall was pierced with rectangular openings to lighten it, and it was placed directly over the middle wall of the building, so that the middle wall could be utilized for its support.

² Kindly lent by the Field Museum in Chicago.

The northern series of rooms was composed originally of six long chambers, three on each side of the arcade, ranging from 30 to 34 feet in length and uniformly $9\frac{1}{2}$ feet wide. Sometime after the completion of the building, however, each one of these was divided into two smaller rooms by the erection of a north and south partition across its middle. That this subdivision dates from a period later than the erection of the building would seem to be indicated by the fact that none of the later partitions mentioned penetrate the thick middle wall, but merely abut against it. There was no bonding of the courses of these partitions with those of the middle wall, and, moreover, they are of less thickness than the eastern and western walls of the six original rooms (*M, PLATE I a*). The twelve smaller rooms thus formed vary from 14 to 16 feet in length. The width remained unchanged. As no doorways pierce the middle wall separating the north and south series from each other, it is evident that entrance to northern rooms must have been gained by doorways in the north wall, and similarly, entrance to southern rooms through doorways in the south wall.

The southern series of rooms differs in its arrangement from the northern. East of the arcade it is divided into five rooms, and west of the arcade into four, the place of the fifth room on the western end being occupied by the southwest annex (*M, PLATE I a*). These nine rooms vary in length from 16 to 22 feet and are all of the same width as the rooms of the northern series, $9\frac{1}{2}$ feet. Judging from the joints the eastern and western walls make with the middle wall, all these rooms were built at the time of the erection of the building, and are not later subdivisions like the rooms of the northern series.

The small annex at the southwest corner introduces an element of irregularity in the ground plan of The House of the Pigeons, marring the symmetry of the building. It was thrown out to the south at right angles to the long axis so that its western façade is coincident with the western façade of the main structure (*M, PLATE I a*). That this annex stands upon a higher level, however, than the rest of the building is clear from the position of its medial cornice, which is 6 inches higher than the roof of the main structure. This position of the medial cornice above the roof of the main structure, when

its regular position is at least 5 feet below the level of the roof, indicates that the southwest annex stands at least 5 or 6 feet higher than the rest of the building. The southwest annex has two rooms, each 16 feet long north and south. The eastern, or back room, is $6\frac{1}{2}$ feet wide, and the western, or front room, 5 feet wide. The entrance, now destroyed, was in the west wall of the latter, a doorway in the east wall $4\frac{1}{2}$ feet wide giving access to the back room.

It was impossible to secure the height of a single room in this building because of the accumulation of débris on the floors. Probably they are of the same height as the arcade, $13\frac{1}{2}$ feet.

The extreme thickness of the middle wall of this structure (*M, PLATE I a and b*), $5\frac{1}{2}$ feet throughout its entire length, is doubtless due to the need for extra strength, which the ancient builders very cleverly foresaw would arise, when such a bulk of masonry as the roof-comb should be built along the centre of the roof. It is located directly above the centre of the middle wall. As it is but $2\frac{1}{2}$ feet thick, and the middle wall is $5\frac{1}{2}$ feet thick, the latter provides a margin of safety on each side of the roof-comb to take care of its downward thrust, which, in the case of such a massive construction, must be excessive. The function of the roof-comb was decorative, and in no sense structural. Originally it was the masonry framework to which an elaborate stucco relief was attached. In the course of time this has cracked and fallen away until now only a few patches remain. A fragment of an elaborate feather head-dress on the south side, in its breadth and delicacy of treatment, particularly in the handling of the drooping feathers, well indicates the magnitude of our loss in the destruction of this great relief. The entire roof-comb had once been brilliantly painted, and close examination still reveals traces of color in places sheltered from the rain.

Its nine triangular extensions, as may be seen in *PLATE II*, do not rise directly from the level of the roof, but surmount a triple-member cornice which itself is 5 feet above the roof top. It is symmetrically mounted with reference to the north and south axis bisecting the arcade. That is, the apex of the middle extension, the fifth from either end, is directly above the centre of the arcade. The remaining eight, four on each side, reach exactly to the east and west ends of the building.

In addition to the rectangular apertures, this roof-comb possesses another interesting characteristic. There project from its north and south faces, for 18 inches or more, a number of flat stones (PLATE II). Whether these formed the supports for stone statuettes or whether they were only the framework for elaborate and heavy pieces of stucco relief, it is now impossible to say. Probably the former hypothesis more correctly explains their use, since flat stones similarly projecting from façades at Chichen Itza and Labna still have stone figures resting upon them.

Owing to the collapse of the exterior walls of The House of the Pigeons (PLATE II), no façade has been preserved, but judging from a small section of the exterior wall of the southwest annex which is still standing, it probably had been quite plain, bearing no sculptural decoration other than the triple-member cornice. The striking feature of this building is, of course, its lofty roof-comb, and with a fine sense of discrimination the ancient builders confined their decorative designs exclusively to it.

This massive roof ornament extending along the entire length of the building must have given in its entirety an imposing and dignified character to this structure. Such an embellishment could not fail to have attracted the attention of every one crossing the North Quadrangle, and must have awakened in the inhabitants of this ancient city vivid impressions concerning very definite religious conceptions.

Passing through the arcade of The House of the Pigeons, we enter the Court of the South Quadrangle (*N*, PLATE I *a* and *b*), the North Range of which, *M*, has just been described. This plaza, surrounded by ranges of rooms on every side, is 214 feet wide east and west and 147 feet deep. The centre is occupied by the customary low rectangular platform (*O*, PLATE I *a* and *b*), which in this instance, fortunately, is sufficiently well preserved to give an idea of the character of this interesting class of remains. It consists of a low platform 16 feet long by 14 feet wide and 1 foot high, from the western end of which rises a smaller platform also a foot high but covering less than half the area of the lower one. Upon this higher step there was mounted originally a monolith of cylindrical form. This

has fallen and lies in two fragments upon the lower step. A hole in the upper step, however, clearly indicates its former position. It is $7\frac{1}{2}$ feet long, one foot and a half in diameter at its smaller (upper) end, and 2 feet in diameter at the base. The surface of this stone is too much weathered to show traces of carving if such were ever present.

Just south of this platform are two or three subterranean structures called "chultunes" (*P*, PLATE I *a* and *b*). Mr. E. H. Thompson, who examined the chultunes of Labna,¹ conjectures them to have been reservoirs to catch and hold water during the rainy season for use in the dry months. That these underground chambers were reservoirs for storing water seems likely from the fact that they occur in greatest abundance at those sites which are not provided with natural reservoirs. Thus, for example, they have been found in great numbers at Uxmal and Labna, but at Chichen Itza, which has two large natural water holes, none have been discovered. In the north-west corner of this court (*Q*, PLATE I *a*) there was originally a small building, which is now completely ruined.

The East and West Ranges of the South Quadrangle (*S* and *T* respectively, PLATE I *a*) rise from much higher terraces than the South Range *V*. The summits of both the former terraces are reached by six or seven low, deep steps running along their entire fronts, the three lowest of which only are continued across the south side of the court to form the terrace of the South Range *V*. The rises of these steps seem to have been from 10 to 12 inches high, and the treads from 4 to $4\frac{1}{2}$ feet deep.

The East Range *S* is more destroyed than any other building of this group. This is due, no doubt, to its location not 10 feet from the base of the Great Pyramid (*R*, PLATE I *a*), in which position it has had to withstand the tremendous battering of the disintegrating masonry rolling down from above. It seems to have been about 120 feet long north and south and 22 feet wide. There were two series of rooms one behind the other, each containing five rooms, a total of ten for the building. The doorways to all of them were in their west

¹ *Memoirs Peabody Museum of American Archaeology and Ethnology*, Harvard University, vol. I, No. 3.

walls. The two southern rooms probably date from a later period than the rest of the building. The presence of a triple-member cornice, an exterior decorative element only, running across their northern walls, and the extreme thickness of these northern walls (*S, PLATE I a*) in comparison with all other partitions of the range, indicate that they were added after the building was completed. The façade of this range has fallen everywhere except at this southeast corner. Judging from the section here preserved it seems to have been quite plain except for the medial cornice of three members.

The West Range (*T, PLATE I a*), just opposite the preceding, is almost as badly demolished. Destruction here seems to have

been due to the presence of a massive roof-comb even larger than that surmounting The House of the Pigeons. This has everywhere caused the collapse of the roof except in a small section near the middle of the building. This range is 115 feet long north and south, and 25 feet wide. It was composed of two series of rooms, one behind the other, each series containing six chambers, or a total of twelve for the range. Since the long middle wall shows no doorways, it is evident that entrance to the rooms of both series must have been effected through the exterior walls. At the southern end of the building the façade is in perfect condition. It is of unusual

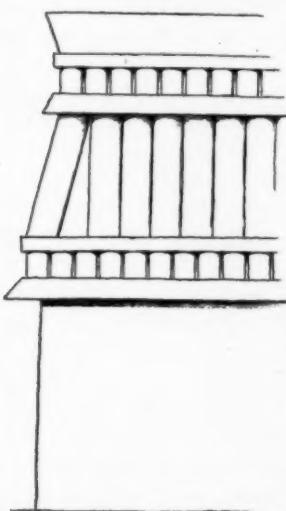


FIGURE 1.—FAÇADE OF RANGE T.

interest, because it is the only one in the entire group now standing which shows sculptural decoration other than the triple-member cornice. The lower zone (Fig. 1) is plain. The upper zone is composed of a series of small decorative columns, which occupy the entire space between the two triple-member cornices, one of which divides the façade into two horizontal zones, while the other runs along the top of the building. These columns

lean inward. This gives to the upper zone the effect of a steep mansard roof. The middle member of both the upper and lower cornices is composed of a series of small drums, which harmonize well with the columns between them. These columns and drums were originally covered with fine white plaster and painted a bright red. Judging from the brilliancy of a small fragment that has been preserved, this building in its entirety must have presented a striking appearance.

Two feet south of this range *T*, and occupying the southwest corner of the South Court, there is another structure (*W*, PLATE I *a*). Débris is piled so high here, however, that it was impossible to determine either its ground-plan or its relation to the South Range *V*. Just west of Range *T* there is a small structure (*X*, PLATE I *a*) containing two rooms. It faces east, which is an additional item of evidence that this group was approached only from the north. (See its location with reference to the whole group in PLATE I *a*.) The rooms are 22 feet long north and south, 7 feet wide, and $11\frac{1}{2}$ feet high. The doorway between them is 5 feet 9 inches wide. It had a wooden lintel, the fragments of which now strew the floor. The exterior doorway, in the east wall, has been destroyed, but judging from the opening, it seems to have been of about the same size. This little building is extremely well preserved. Its façade is quite plain except for the medial cornice.

The south and remaining range of this quadrangle (*V*, PLATE I *a* and *b*) is built against a solid rubble substructure *Y*, which forms the immediate approach to the South Pyramid. This range is composed of two series of rooms, one behind the other, each containing eight chambers. These, including a transverse room in the middle, make a total of seventeen rooms for the building. A close study of this transverse middle room reveals an interesting state of affairs. Originally it seems to have been an arcade, like that of The House of the Pigeons, passing through the centre of the building and opening upon a court now occupied by the rubble substructure *Y*. At one period in the history of the group, prior to the erection of this substructure and the South Pyramid, there had been south of Range *V* a court or group of buildings to which this arcade had

given access. Later, however, in order to make way for the substructure *Y*, this court was filled in to the level of the roof of Range *V*; and incident to these changes the southern end of this arcade was walled up. As a final step, in order to utilize the now abandoned arcade, a wall was built across its northern end in which a doorway was left, forming thus a new room. That we are dealing here with two different periods of construction seems probable also from the fact that there is a considerable difference in the orientation of the two parts of this group (PLATE I *a*). The bearing of The House of the Pigeons, for example, is north $10^{\circ} 36' 45''$ east, and that of the temple surmounting the South Pyramid is north $6^{\circ} 25' 15''$ east, or a difference of $4^{\circ} 11' 30''$ in the orientation of these two structures. While it was impossible to take the bearing of Range *V* because of its advanced state of ruin, nevertheless, measurements in Court *N* indicate that the bearing of this range is about the same as that of The House of the Pigeons. This, however, was to be expected, inasmuch as The House of the Pigeons *M* and Ranges *S*, *T*, and *V* constitute a unit by themselves. The shifting of the approximate north and south axis of the South Pyramid and the temple surmounting it $4^{\circ} 11' 30''$ nearer north than the approximate north and south axis of the rest of the group, would of itself indicate different periods of construction, especially since no buildings are found, immediately west of the South Pyramid, which could have interfered at the time of its erection with its being shifted somewhat toward the west so as to conform with the same north and south axis of the other members of the group.

This hypothesis of two periods of construction here is supported by a study of the north façade of Range *V*. Wherever it appears, the façade of this building seems to have been of the type most commonly found in the structures of this group, *i.e.* plain and divided horizontally by the triple-member cornice. Now, curiously enough, just before passing in front of the north wall of the re-used arcade, the cornice suddenly ceases and the wall is quite plain (Fig. 2). Moreover, the two ends of the cornice made by this break are not vertical but have the same slant and lie in the same north and south planes as the two sides of the arcade arch. This is strong evidence that

the cornice had been completed at a period when no wall stood at the north end of the arcade, and that later when this wall was built the cornice was not carried across its face. We have here, then, quite clearly two periods of construction: first, a period when the arcade passing through the centre of the South Range *V* gave into a court south of it; and second, a period after the South Pyramid and its sub-structure *Y* had been built, when the court south of Range *V* was filled in, and any structures that may have stood there were either torn down or covered up. The rooms of the South Range *V* vary in length from 18 to 22 feet east and west and are uniformly 8 feet wide. The doorways, which are all necessarily on the north side, vary from

3 to 4 feet wide. This range presents the only instance in the entire group of three intercommunicating rooms, it being possible to pass from the re-used arcade into the two rooms immediately west of it without leaving the building. At the western end of Range *V* and adjoining it at right angles there is another range of rooms on the same level (*Z*, PLATE I *a*), which extends along the western sides of *Y* and the South Pyramid. The southern end of this range, because of its location just below the South Pyramid, has been literally pounded to pieces by the stones falling from above. No attempt to reconstruct the ground-plan at this end was made, but the few rooms of the northern end which it was possible to measure were 18 or 19 feet long and 8 feet wide. It is not improbable that this range may have been composed of two series of rooms instead of one, as appears in PLATE I *a*, but ruin has advanced so far all along this western side that it would require much excavation to establish the original ground-plan.

The platform *Y* (PLATE I *a* and *b*) was reached by the third stairway *U*. This is 15 feet wide and rises from the low terrace which supports the South Range *V*, passing over that

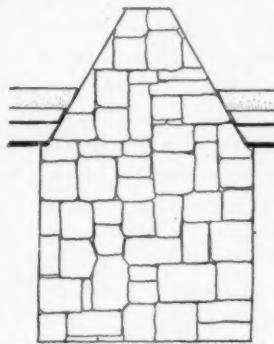


FIGURE 2.—THE BLOCKED ARCADE OF RANGE *V*.

building at its middle point (PLATE I *a* and *b*). Traces of the half arch, which was built under this stairway, allowing entrance to the arcade room, still adhere to the north façade at this point, though the greater part of the stairway is now in utter ruin.

Climbing over its fallen steps we reach the top of *Y*, which is 20 feet above the level of the South Court. This platform, as mentioned above, is the immediate substructure from which rises the final member of the group, the South Pyramid. It is 220 feet wide east and west, and extends back to the base of the pyramid, a distance of 130 feet. In the centre there is a mound of ruined masonry (*A'*, PLATE I *a* and *b*), which marks the site of the usual low platform (compare *E* and *O*, PLATE I *a* and *b*), and near by a fragment of the fallen picote, one foot and a half in diameter.

Two mounds (*B'* and *C'*, PLATE I *a*) extend across the eastern and western ends of *Y*, projecting from the north side of the South Pyramid, and having their summits on a level with its third terrace. They are 12 feet high. Each affords a building area of 50 feet north and south by 25 feet east and west. Originally these mounds supported at their northern extremities structures of some kind, which, in both cases, have now disappeared.

Along the west side of *C'*, the westernmost of these two mounds, and extending along the west side of the South Pyramid, is a range of seven or eight rooms (*G'*, PLATE I *a*). These rise from the level of the platform *Y*, and their back walls are built against *C'* and the South Pyramid. They vary in length from 20 to 22 feet north and south, and are uniformly 9 feet wide. Their roofs are on the same level as the summit of mound *C'* and the third terrace of the South Pyramid, or a height of 12 feet above *Y*. This Range *G'* is so placed that it rises from the edge of the masonry substructure *Y* against which Range *Z* is built (*Y*, *Z*, *G'*, PLATE I *a*). The roof of this latter range originally formed a terrace, now destroyed, in front of Range *G'*. Range *G'* has had to withstand almost as much battering from falling stones as Range *Z* just below it, and consequently its rooms are almost as completely demolished.

Just south of *A'* (PLATE I *a* and *b*) two steps cross platform *Y* from *B'* to *C'*, making a slightly higher level *D'*. From

this rises the fourth and last stairway *E'*, to the summit of the South Pyramid.

The South Pyramid itself is composed of nine terraces (PLATE I *a* and *b*), each 4 feet high, and each set back 4 feet from the edge of the one immediately below it. These terraces have vertical retaining walls and are faced with neatly dressed stone. The height of the South Pyramid proper, that is from *D'* to its summit, is 36 feet, but the total elevation above the level of the plain is 90 feet. The area on top is 116 feet long east and west and 30 feet wide. The only stairway *E'* is located on the north side, but it was too much destroyed to measure at any point.

The temple *F'* (PLATE I *a* and *b*) surmounting the South Pyramid is 104 feet long and 16 feet wide. The façade above the triple-member cornice has fallen, and it is impossible to say whether it had been sculptured originally or not. This building is composed of four rooms, three on the northern side in the same east and west line, and the fourth adjoining and communicating with the middle room of these three on its south side. These rooms vary in length from 30 to 32 feet, but are uniformly 13 feet high. The three front rooms are $7\frac{1}{2}$ feet wide, just twice the width of the single back room, which is very narrow, being but 3 feet 8 inches wide (*F'*, PLATE I *a* and *b*). The four doorways of this building are all in the north walls of the rooms to which they give access, those of the middle room and the narrow room just south of it being 6 feet wide, and those of the east and west rooms 5 feet wide.

It is significant that here again in the southernmost structure of the group we find the same condition prevailing, *i.e.* that entrance could be effected only from the north. Not only has the South Pyramid no stairway on any other side, but the building upon its summit has no exterior doorways excepting the three in its north façade.

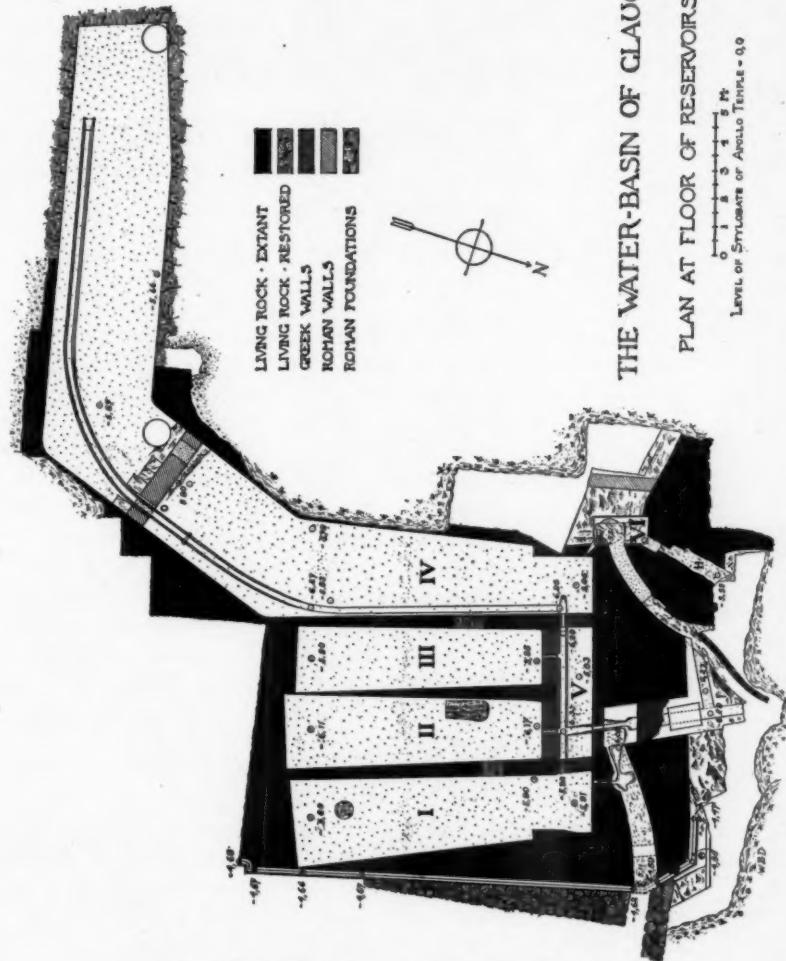
It was clearly the intention of the builders to compel all those whose duty or pleasure called them to this probably ceremonially important spot, to enter from a very definite direction by means of a formal approach. And even if future excavations should establish the presence of one or more stairways on the western side of the substructure, which now seems

unlikely, judging from the rather conspicuous facing of a building like *X*, PLATE I *a* and *b*, for example, to the east and away from the west, such a discovery would not alter the essential fact that the chief and probably ceremonial entrance had been from the north.

Standing upon the summit of the South Pyramid and looking northward, the scheme of the ancient builders clearly unfolds itself. The various ranges of rooms fall into an orderly arrangement around the sides of a series of successively higher courts, through which by means of the stairways and arcade runs the dominant idea of an approach to the summit of the South Pyramid. At this point all lines converge. Here, far above the subsidiary structures which line its thoroughfare, and admirably adapted in location and ground plan for such a purpose, towers a solitary temple, the ultimate expression of the group—its sanctuary.

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THE FOUNTAIN OF GLAUCE AT CORINTH

[PLATE III]

I. Κρήνη Καλουμένη Γλαύκης

Ἐς γὰρ ταύτην ἔρριψεν αὐτήν, ὡς λέγουσι, τῶν Μηδείας ἐσεσθαι φαρμάκων
τὸῦ ὕδωρ νομίζουσα ἄμα. — PAUS. II, 3. 6.

WHEN several years ago excavations were begun in and about the huge block of native rock 80 m. west of the temple of Apollo, the chief concern was the determination of another important point of Corinthian topography. As soon as it became evident that the fountain of Glauce mentioned by Pausanias had been discovered, excavation was discontinued. The details of the discovery were published with the recommendation that at some future time the work be resumed (A.J.A. IV, 1900, p. 461). The limits of the fountain house, the identification of which has been confirmed recently by the finding of the odeum just beyond (*ὑπὲρ τὴν κρήνην*), have now been determined; and though some questions can be answered only by further excavation, the results thus far obtained, prompt a reconsideration of the problem. Glauce is the best-preserved fountain of the times of the tyrants. At Megara the superstructure of the fountain of Theagenes is a matter of conjecture; the Enneacrunus has suffered such destruction that not even the ground plan is certain, and the restoration of its façade depends on a vase painting; the fountain house built by Eupalinus for the Samians is still undiscovered. Glauce, three of whose reservoirs are to this day covered by their original roof, is the most abundant source for information about the *krene* which proved so important a political asset of the tyrants of the seventh and sixth centuries.

The fountain of Glauce was cut in the rock of the ridge on which the temple of Apollo stands (Fig. 1). In form it



FIGURE 1.—THE FOUNTAIN OF GLAUCE—FRONT VIEW.

is roughly a great cube, 15 m. long and 14 m. wide, with a peculiar extension at the back. It consisted of four large reservoirs, I-IV (PLATE III), of a fifth which lies in front of II

and III, and of another (VI) at the northwest corner of the cube and at the western end of the platform which reached across the front and afforded access to the water. This platform is now badly worn, but seems originally to have been

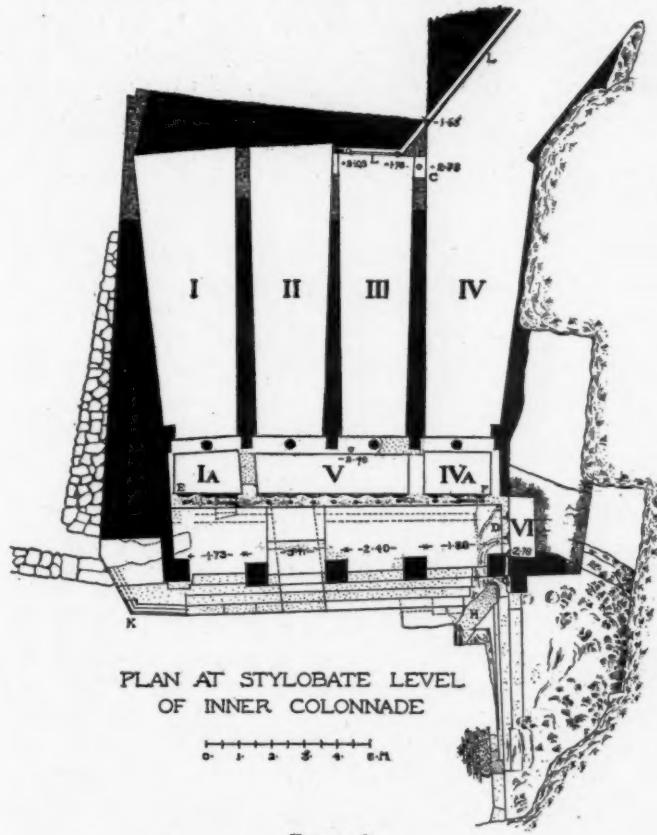


FIGURE 2.

about 2 m. higher than the floor of the reservoirs. As usual, the water was drawn in jars over a parapet, formed in this case of living rock but now broken away except in front of VI. The platform was approached by a flight of four steps

and was covered throughout its length by a vaulted roof of living rock. This rested along the outer edge on three square pillars between *antae*, and the five stumps of these supports still remain. The outer walls of the cube extended forward to the steps—the eastern wall with greatly reduced thickness (Fig. 2). The inner walls stopped at V, the back wall of which lay in the line of a second stylobate directly under the inner edge of the vault (Fig. 10). As the outer pillars stood in the line of the chamber walls, the inner were visible between them. These have disappeared, as well as most of the stylobate on which they stood. The inner walls terminated at this line in *antae*, which have been broken away except for a single stump.

The builders may have chosen a north front for the fountain because this involved the least exposure of the water to the sun and gave access to the cooling breezes from the Corinthian gulf, which, owing to the commanding position of Glauce, would blow in freely over the water. Whether the fountain house stood completely isolated is a matter of conjecture. It is certain that the Greeks quarried away the rock on the east side, for the even surface of that face is broken by a Greek water channel of careful workmanship (Fig. 3 A).

When Glauce was converted into a house in Mediaeval times, doors were cut in its walls. The east wall was originally quite closed. Original openings in the inner walls at the back were in some cases enlarged, so that it is now possible for one to look through the fountain from east to west (Fig. 3).

To facilitate the removal of the stone which was quarried within the chambers, a passageway 1.22 m. wide was cut through the platform to the depth of the chambers (PLATE III, Fig. 1). This passage is 4.33 m. long, but its continuation to the face of the rock was destroyed by later quarrying in front of the fountain. The fact that the inner walls of living rock do not reach forward to the platform, and that walls of squared blocks (PLATE III) are found here and at the north ends of II and III, is explained in the same way. When several hundred cubic metres of stone had been thus conveniently taken out, the five openings were closed with walls to the height of the

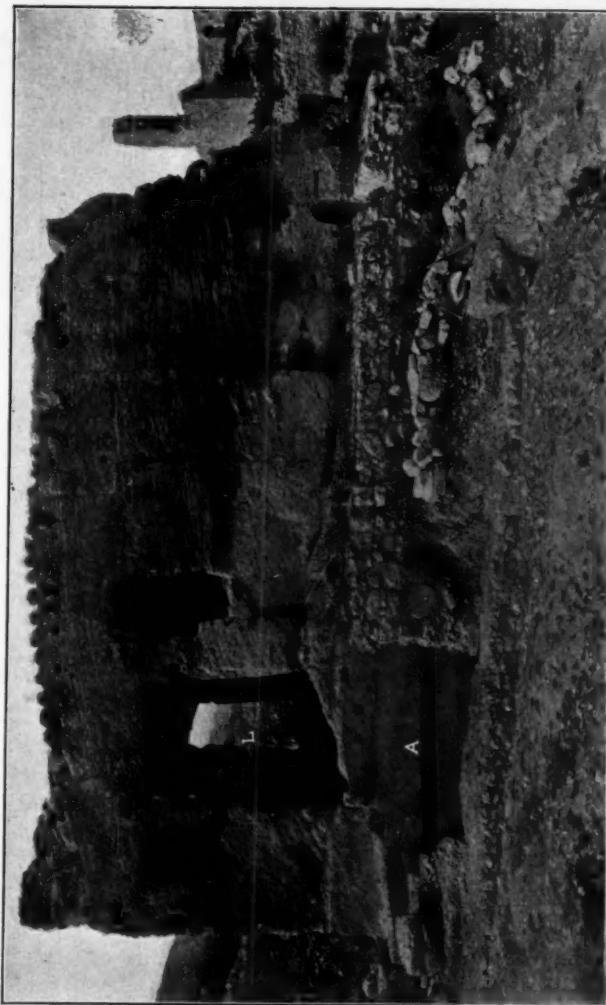


FIGURE 3.—THE FOUNTAIN OF GLAUC—EAST FACE.

parapet, the passage through the platform covered with slabs, and the needed steps supplied. The passage was cut obliquely, but the cuttings for its cover were made straight with refer-

ence to the partition walls—a correction consciously sought (Fig. 1).

The fountain has been assigned to the time when the temple of Apollo was built, and the two have been regarded as parts of one building scheme. As no clamps were used in the fountain, we lack one important indication of date, but there is another detail which may throw some light on the matter. Concave



FIGURE 4.—GLAUCÉ FROM THE SOUTHWEST.

narrow cuttings, 0.10–0.12 m. long, hacked in horizontal bands with a rough little ridge between them (Fig. 4 *B*), are found on blocks of Glauconite schist, of the temple of Apollo, and of the fountain frieze in the Agora, where the \hookleftarrow clamp indicates the sixth century or about that date.¹

¹ But this method of dressing poros blocks may have been in use a long while, and it is of interest to find it illustrated on blocks still *in situ* in the euthyneria of the Sicyonian Treasury at Olympia, especially since Dörpfeld has shown that stone for the treasury was imported ready cut from Sicyon (*Ath. Mitt.* 1883, p. 69). The early date given by Pausanias for this building has, however, been

We may turn now to a somewhat detailed account of the fountain of Glauce,¹ beginning with chamber IV, which received the water first. It differs from the others in length and form (PLATE III), extending back of the cube, at first southwest for 8.50 m. and then west 13.50 m., so that the total length is 33.05 m. The width varies from 2 m. to 3.50 m. The upper part is gone with the exception of a piece of the roof supported by the partition wall III-IV. This shows that the portion included within the cube had the same height as its neighbors I-III. The extension must also have been completely covered, probably with a roof of living rock. Its walls have a marked inclination (Figs. 4-5). Had these been vertical, the span of the roof would regularly have been 3.50 m., and 4 m. at the second bend. The east wall just back of the cube still stands to a height of 3.53 m. and has a forward inclination of 0.44 m. Another example of a reservoir cut with sloping walls in the solid rock is found on the Aspis at Argos. The better preserved of two long cisterns there has at the bottom a width of 3 m., which gradually diminishes to 0.80-0.25 m. at the present top. Voll-

rejected. Poros blocks at Delphi offer many examples of the same style of hewing, and it is a fact attested by inscriptions found there that this material was cut in Corinthian quarries (B.C.H. XXII, p. 304, l. 45). The style may be peculiar to the quarries of Sicyon and Corinth.

¹ I am indebted to Mr. B. H. Hill, Director of the American School, and to Mr. W. B. Dinsmoor, Fellow in Architecture, for helpful observations. The latter has kindly drawn the careful plans to which constant reference is made. Mr. H. D. Wood discovered the meagre but certain remains of the vault over the porch.

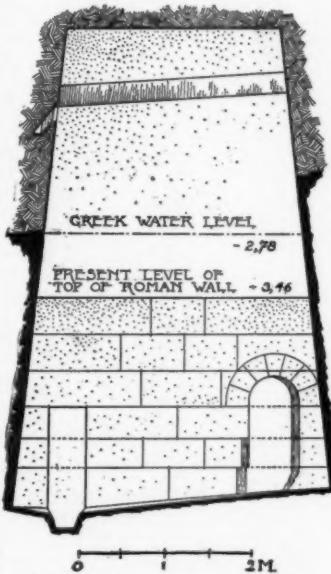


FIGURE 5.—CROSS-SECTION OF RESERVOIR IV AND ROMAN WALL.

graff believes that the narrow opening was covered with slabs. (*B.C.H.* XXXI, p. 153.)

The water pouring first into IV, presumably at its extreme upper end (the upper half of the chamber has been quarried to the floor (Fig. 7) so that the inlet cannot be determined), filled this chamber, the small one (VI), and V, a chamber which served an important purpose in the system. The position of the narrow V in front of II and III made possible the drawing of water along three-fourths of the front, in case those chambers were empty. The original height of the walls of V is preserved only at the front of chamber III (Fig. 1), and the top block of the east wall has been identified. When chamber I had filled, water could be drawn all along the parapet. Connection between the chambers was effected by small openings at floor level; that of IV and V lay in the drain (PLATE III).

The fact that II and III were inaccessible from the platform makes it likely that they were the last to be filled. Water flowed from IV into III by means of an opening through their partition wall near the back wall of the cube (Fig. 4 C). This opening is 2.86 m. above the sloping floor of IV and is proved to be ancient Greek by the cement, a smooth hard composition containing little pebbles. This was applied to all interior surfaces in the fountain and presents by its excellence a striking contrast to the Roman stucco. Chamber II was filled by the overflow from III through an opening at the back wall. The thickness of the partition wall between these two chambers is noticeably less (0.05 m. at the back near the floor) than that of the other partition walls (0.32–0.40 m.). The water in II and III passed into V through the holes at floor level.

Not the least interesting is the small chamber VI at the west end of the platform. It is 0.44 m. shallower than the adjoining IV, whence its supply came through an opening 0.10 m. wide on that side and 0.25 × 0.25 m. on the other. Though the chamber was small, it increased the number of places by two or three at which water could be drawn—a clever expedient in the economy of the system. The heavy west and south walls have been quarried to within 0.75 m. of the floor, but the parapet remains 0.65 m. high and 0.25 m. thick (Fig.

1 D). On the inner face at the top, the surface has been worn concave in three places by the heavy jars of water drawn up over it, and on the top are two round tapering holes in which the women rested the pointed jars while they turned to take them upon their backs. Of a similar parapet in front of the other chambers the broken ends are still to be seen (Fig. 1 E-F). The stub

at the east end (E) is 0.75 m. high and 0.40 m. thick. The inner surface shows the characteristic wearing from the jars. The parapets have been restored as equal in height with the walls of V.

Provision was made for the escape of the excess water in the following manner. At the northeast corner of VI (Fig. 1 G), 2.54 m. above the floor of that chamber was an opening into a small channel 0.10 m. high and 0.13 m. wide (Fig. 6 G). The immediate connection with the chamber is broken away to the extent of 0.06 m., but it may readily be restored. From the corner it bent around to the north and in line with the parapet pierced the pilaster (Fig. 2 G), with at first a slight and then a marked drop. It emerges near the corner formed by this pilaster and another facing north. The rock has been broken off close to the channel so that its top is nowhere completely intact, but its character is unmistakable. Smoothly cut, it rivals in carefulness of workmanship the other

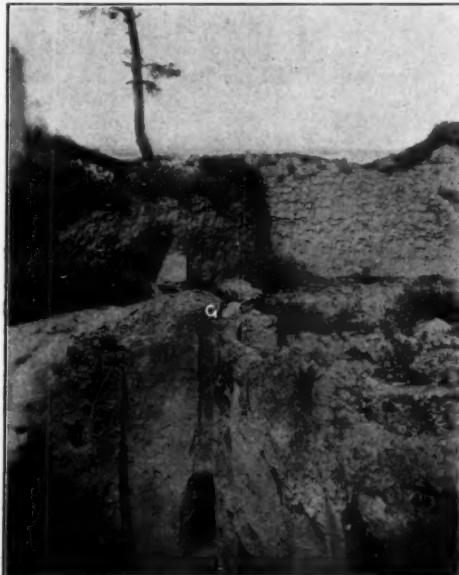


FIGURE 6.—EXCESS ESCAPE CHANNEL.

Greek channels of the fountain. Thus, when the capacity of all six chambers was overtaxed, the excess water escaped by this means, finding its way probably to a channel which crossed the front and east sides of the fountain and terminated perhaps in some cistern in the vicinity. For the part of the channel cut in the east face breaks off at the present southeast corner of the cube where later quarrying has disturbed Greek conditions, thus making it impossible to determine the destination of the water. And likewise in front of the porch later quarrying which cut into the steps destroyed the channel there, save for a short piece at the northeast corner. Here the normal depth of the channel, 0.17 m., is not maintained—the channel in front thus appearing to have been shallower than its continuation on the east face. This means of carrying away the excess went out of use when the tunnel under the east half of the platform was cut through. This tunnel, the inner end of which is ancient Greek, was made before the Roman stoa was built immediately on the east. The foundations for the west wall of the stoa were placed snug up to Glauce—so close that at the southeast corner of the cube the rock was cut back to make a bed for the foundation (Figs. 2 and 3) and the channel filled with rubble. The date of the stoa, which is not mentioned by Pausanias, is uncertain.

The method of the provision for excess water shows that no fountain of spouts existed in immediate connection with the system, and by giving the water-level it makes possible a calculation of the capacity of the fountain. When all the chambers were brimful, the total amount of water was 527 cubic metres, allowance being made by average for sloping floors, inclining and converging walls. This is an amount considerably greater than was provided for in the Megarian fountain, the capacity of which was 305 cubic metres. In the case of the latter, the excess escape has not been found, but the incrustation on the walls affords a satisfactory clew to the depth of the water. The floor area of the Corinthian fountain is 172 square metres, that of the less capacious Megarian 244. The maximum depth of water in the latter was 1.25 m. The conjectural character of the ground plan in the case of the Enneacrunus would render any calculation of its capacity extremely uncertain. The water was 1.50 m. deep.

The question of drainage may now be considered. A narrow gutter runs nearly the full length of IV and across V to the drain which lay in the wide passage cut through the platform (PLATE III, Fig. 1). In V the drain is 0.04 m. lower at the bend than at a point below the steps. This may be a device for collecting sediment and thereby preventing accumulation in the long course of the drain. The Romans must have regarded this feature as a defect, for they sought to give the drain an uninterrupted downward grade by a filling of brick and mortar. Toward this gutter all floors slope. The drain holes of II and III opened directly into it. Chamber I was drained and cleaned by an opening into V, which is 0.025 m. lower than either of the chamber's other connections. The purpose of the opening into the tunnel (PLATE III, Fig. 10) seems to have been to empty I without necessitating the disuse of V. The important fact, which seems not to have been noticed in discussions of fountain construction, is that all the chambers were not drained and cleaned at once. While I, II, III, and V were undergoing the process, IV and VI furnished water, and *vice versa*, when IV, V, and VI were empty, I, II, and III contained the supply.

In the latter case the stream of water which poured regularly into IV at the upper end had to be diverted. It flowed in a high channel along the south and east walls of IV to the cube (L in Figs. 2, 4, 5). The elbow of the channel found embedded in the Roman cross wall fits the angle made by those two walls. At the cube the channel still preserved (Fig. 4 L) passes 4.15 m. above the floor to III, where it bends and crosses the back wall of that chamber with a marked grade of 1 in 8. It ends in the line of the partition wall III-II, in a small hole opening into II. Some question may arise as to the date of this hole, for it is not well cut. But that the original design was to have the channel end in II, so that water might be carried past III, is a safe inference, first from the fact that otherwise the channel had no need to cross III and secondly because chamber II reaches 0.30 m. back of III (PLATE III), as if to give the water a free fall into II. Then again a plug hole like the existing one could be more easily controlled from the large opening in the roof, which is thought to be Greek.

This opening was probably somewhat enlarged and provided with rudely cut steps to serve as a means of ascent to the roof when Glauce became a house. There was also a large opening in the partition wall of II-III at its south end, near the end of this channel. This is shown by the presence of ancient Greek cement on the back wall where the partition wall would have joined it, but how large an opening there was cannot now be determined, for it became a door in the house period and has since been made larger (Fig. 3). The dimensions and character of the channel are those of the one on the east face of the cube (both appear in Fig. 3). Though it has been exposed to the wearing influences of the atmosphere and has lost every trace of cement, the careful cutting is still in evidence. The water carried by this channel flowing along IV poured into III and II, sometimes only into II, and thence passed to I, where it could be drawn from the platform. It is possible that III was sometimes filled and not II, and then the water passed from III into V, since any attempt at working out the problem of the distribution of the water must allow for the fair probability that the four large reservoirs were filled successively rather than simultaneously. The water in II, when V was empty on cleaning days, passed into I through a cement-lined hole at the floor level of that chamber (PLATE III).

The position of this hole near the front wall of II prevented a constant forward movement of the water in I from the back of the chamber to the front. In the case of II, III, IV the water poured in at the upper end of the chamber and moved forward to the place of drawing, for it is probable that when all six reservoirs were full, the plugs in the openings from II and III into V were removed. A peculiar feature of II, namely, that its floor is 0.22-0.25 m. lower than that of I and III, allowed the sediment to settle on this lower level and to remain undisturbed when the water flowed into I. Such accumulation could be removed and the chamber flushed by means of the hole opening into the drain in V. The carefully cut and cement-lined opening from II into I is 0.095 m. in diameter at the end in II and 0.08 m. at the other. This tapering, which is true also of the opening from III into V, follows the normal direction of the flow between those chambers. The excess

from I-II-III apparently flowed from the latter into IV by means of the opening (Fig. 4 C) at the back of the partition wall between III and IV. In fact, IV may thus have been refilled.

The high channel in IV which on cleaning days made it possible for the system to supply water is of importance in



FIGURE 7.—UPPER END OF IV, SHOWING HOW THE WALLS HAVE BEEN QUARRIED AWAY.

another respect. The almost complete destruction of the walls of IV back of the cube (Figs. 4, 7) has left in uncertainty the height of the roof of that part. In one place the sloping walls have a height of 3.53 m., but in the western half they have been quarried to the very floor (Fig. 7). Now the bottom of the channel in question is 4.15 m. above the floor at the back of

the cube and it sloped up somewhat to the point of inlet, keeping within IV. The roof had to be still higher. As the height of the roof preserved is 5.57 m., it becomes probable that this height was continued back over the extension of IV.

It remains to consider what the means of draining VI were. There is a rock-cut tunnel (PLATE III, Fig. 1), starting from the east side of the chamber; this curves around under the platform and seems, before the Roman quarrying, to have joined the drain of the system. The chisel marks show that the tunnel was cut from the chamber toward the stair. At the inner end it is 1.05 m. high and 0.50 m. wide. The south wall has not a gradual curve, but breaks forward 0.04 m. several times. The bottom is approximately 0.60 m. below the floor of the chamber, which, except around the edges, has been cut into and badly damaged. The tunnel, which is Greek, was sealed at the inner end by a wall with a drain hole at the bottom of it. Towards the tunnel entrance the floor of the basin slopes from every side. The removal of the wall must be referred to the time when the tunnel was used in connection with two later channels. A glance at the plan will show that the tunnel was made for neither of these, but had a conduit of its own before the rock pavement in front of Glauce was quarried by the Romans. The tunnel in Greek times may have been used in drawing off a portion of the contents of IV.



FIGURE 8.—THE ARCHITRAVE.

Up to this point the details of construction which played an immediate part in the operation of the system have been considered. A question now arises as to the ornamental features of the fountain, if any there were. Its character would admit only of the simplest ornamentation, and of such a fragment has been preserved. In the upper northeast part of the cube, scarcely protected by the heavy roof and east wall, is the weather-beaten bit of a rock-cut architrave (Figs. 1 *M*, 8, 9, 10). The plane of the bottom coincides with the ceiling of I. The vertical face reaches up 0.29 m. and is crowned by a simple

cornice. Above, the rock is cut back 0.12 m., and from there upward and forward the roof curves distinctly, but it breaks



FIGURE 9.—VIEW FROM WEST ACROSS RESERVOIRS.

off 1.50 m. from the architrave, and the further course of the curve is a matter of probability. It seems such that its highest point stood approximately over the middle of the

space between the architrave and the rock-hewn pillars on the outer edge of the platform. In the angle formed by the east wall and the vault there is a bit of that excellent cement used in the chambers, to testify that the vault is Greek. As the roof is preserved in front of the architrave only at the northeast corner (Fig. 1) (the break retreats more and more as it is followed toward the west), the evidence for a vaulted ceiling is

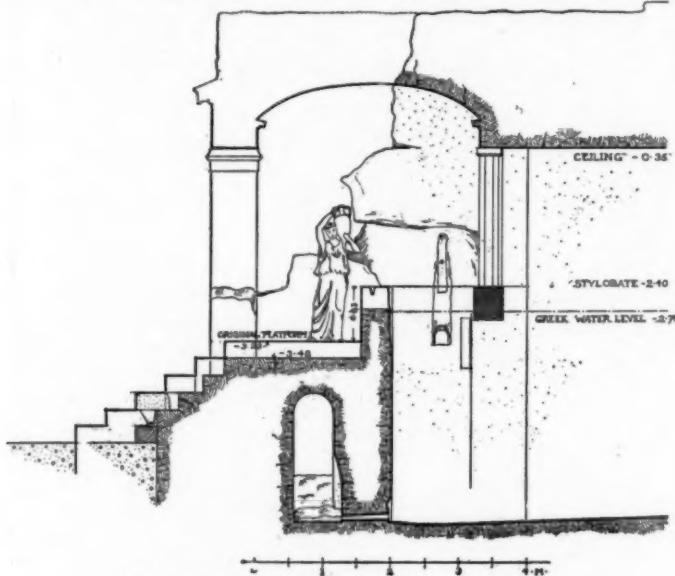


FIGURE 10.—CROSS-SECTION THROUGH PORTICO.

confined to that place, but it may safely be assumed to have extended across the whole porch and may be thought of as an expedient for reducing the weight of the rock, since the span from architrave to pillars was 3.30 m. (Fig. 10). The fact that a vault existed over the platform makes it possible to determine the height of the rock-hewn pillars, the broken stumps of which remain. If one makes the fair assumption that the vault terminated above the pillars in an architrave corresponding to that of which a piece is preserved, a height of 2.88 m. is obtained for the pillars including capitals.

Again, the fragment of the architrave makes intelligible certain cuttings that prove most important in the restoration of the interior of the porch. Beneath it the Greeks cut in the walls of I two holes, 0.10 m. deep, 0.45 m. wide, and 0.55 m. high, opposite each other, and 3 m. above the floor (Figs. 9 N^1 , 10). The same thing may be observed in IV also (Fig. 9 N^2). The portion of the west wall of I in which the cutting was made has been broken away, but both cuttings can be seen in IV, the east one of which contains abundant

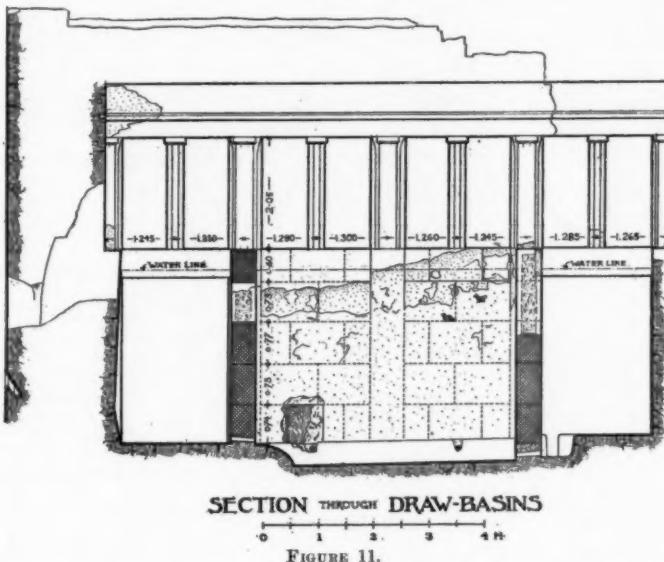


FIGURE 11.

remains of Greek cement. A bit of the right angle which the cement forms shows that the beam was lowered into these cuttings before the Greeks cemented the chamber. As these beams were not set deep in the walls (less than 0.10 m.) and had no other support, it is obvious that whatever rested upon them fulfilled no necessary structural function. The idea therefore suggests itself that they, together with the back wall of V lying in the same line (Fig. 2), had at their middle points shafts which reached up to the architrave (Fig. 11). A fragment of

an octagonal shaft of poros has been found in the neighborhood of Glauce, with the required diameter of 0.28 m., and has been assigned to this stylobate. One thinks immediately of the octagonal shafts in the fountain of Theagenes (Fig. 15).¹ At the end of the partition wall between III and IV the stub of an anta is preserved, and with the help of this others have been restored at the ends of the other partition walls (Figs. 2, 12). For these antae the walls were narrowed to the proper width.

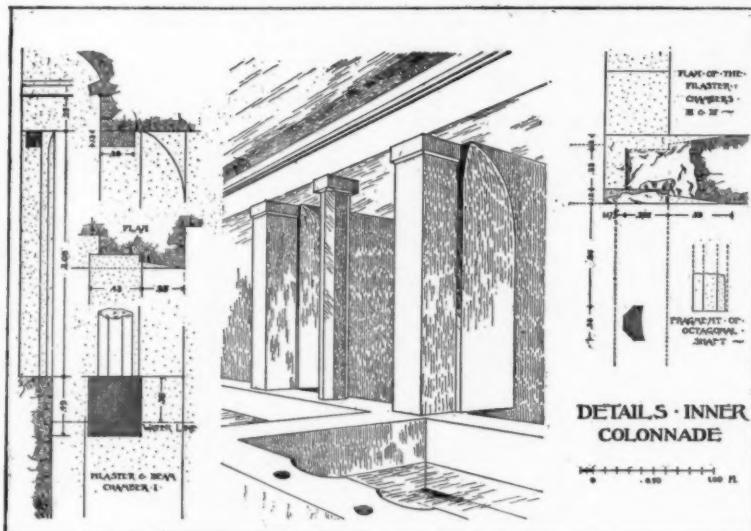


FIGURE 12.—DETAILS OF INNER COLONNADE.

This is best seen in the case of the partition wall between I and II, where the narrowing reaches down only to the level of the stylobate. Yet another important feature is explained by the presence of the shafts. In I and IV the outside walls advance at a point just back of the stylobate (PLATE III). The simple reason is that the four long chambers thus acquire at the stylobate an approximate width of 2 m., and a uniform intercolumniation results.²

¹ See also Furtwängler, *Aegina*, p. 84.

² The two marble lion-heads found in chamber V presumably belonged among the decorative features of the fountain at some period, but they cannot be definitely placed. See *A.J.A.* VI, 1902, p. 423.

The interior surfaces of the porch were covered with cement, as were those of the chambers. The pilasters of the outer row of pillars show traces of it on the front face, a survival suggesting that the façade was also so covered. The walls and ceiling of the Athenian Callirhoe received in Pisistratean times a coat of stucco. Ross (*Reisen*, I, 130) describes a rock-hewn system in Ceos, and here the reservoir and early Doric column of living rock were similarly treated. But apart from any example of such practice, the soft and porous character of the rock in Glauce, which suffered from exposure to the elements, would require a protecting coat of stucco.

Before the Glouce of Roman times is considered, a moment may be spent in conjecturing what the condition of the fountain was when the Romans had destroyed the city. There is some ground for the suspicion that before the coming of the Roman rebuilders of Corinth, Glouce was already partly ruined. The cross wall in IV, which is referred to the early years of Roman reoccupation, contains several pieces from the cemented walls. It would thus appear that, at the time the cross wall was built, reservoir IV had in part been destroyed. It is significant that among the pieces is one from the channel which carried water to III, when IV was for any reason empty, a fact which shows that a channel of prime importance in the Greek system of distributing the water had been destroyed before the Romans repaired IV. In fact, the position of the cross wall seems to have been determined by the ruined state of the Greek walls behind it (Figs. 4, 7).

Coming to the part of IV lying in front of the Roman cross wall, one meets again with a hint that the roof and the upper part of the west wall may have gone before Roman times. A comparison of the east and west walls of Glouce shows a noticeable difference in width (PLATE III, Fig. 2). The east wall, which has been preserved unchanged from Greek times, is 2 m. thick in the line of the inner stylobate; on the other hand the present west wall at the same line is only 0.60 m. and a little farther back it is only 0.45 m. While the east wall could and did without danger grow thinner as it neared the thick back wall, the west one must have maintained a nearly uniform width, because the back wall did not cross IV to assist in bear-

ing the weight of the roof. It is certain that the Greeks did not support the roof along the west side with the present thin wall, a fact which is confirmed by a glance at the west face of it, which is rough, whereas the outer face of the east wall is smooth. Was the quarrying into the west wall done by the Romans, when the wall no longer supported the roof of IV, or did the Romans by quarrying too closely cause immediately or ultimately the fall of the roof? It is tempting to make the collapse of this section contemporary with that of the portion back of the cross wall. Evidence that the façade was destroyed at this time is not at hand, and if it was destroyed then, we should have to suppose that the stumps of the pillars remained standing throughout the Roman period, an unsightly obstacle on the platform.

The façade was partly in ruin when the inner walls of VI were quarried to within 0.75 m. of the floor, since this left the vaulted roof with too little support at the northwest corner. But the time when those walls were quarried away is uncertain. A set of foot holes carelessly cut in the east wall to facilitate descent may mean that the basin was in use in Roman times. This would have been possible, however, when the roof above was gone.

While it is conceivable that Glauce was found intact, and repaired only after a period of use by the Romans, it is also conceivable that the Roman destroyers of Corinth in 146 B.C. wrecked a structure so essential to the life of the city. The long fourth chamber as the most vital, because it first received the water supply, and the façade as the most pleasing feature of the structure might well have borne the brunt of the attack. The Roman senate had ordered that the city should not be rebuilt.

The façade of the fountain was broken away (Figs. 1, 9) and not a fragment of it has been identified. The line of breakage is from 2.50 to 4.50 m. back of the pillars, so that the difficulty of restoration is greatly increased. The broken stumps along the outer edge of the platform show that three squared pillars between pilasters stood there. They were 2.88 m. high and must have had the simplest of capitals if they had any at all. How the rock above was treated is uncertain; perhaps a plain

architrave, with Doric frieze and pediment, was used. The fact that the heavy east wall stopped 1.35 m. back of the line of pillars, save for a strip 0.25 m. thick which reached to the pilaster (Fig. 2), perhaps indicates an expedient for setting off the façade. The Doric frieze for early fountains is attested by the François vase, but it is uncertain what form of roof is there intended. The gable has the sanction of sixth-century vase painting and is not without a real, though later, example in Corinth itself. Pirene on Acrocorinth has a pillar between pilasters and above a tiny pediment.¹ At Cyrene the face of the cliff above the fountain of Apollo shows a gable cutting into which Smith and Porcher (*Discoveries in Cyrene*, p. 26, pl. XI) believe the pediment of a portico to have been fitted.

The exact source of the water supply for Glauce is unknown. The native rock a few paces back of the fountain has been examined for a distance of 73 m. by digging a trench to the level of the inlet into the fourth chamber. But the expected conduit cut in the rock in the direction of the acropolis has not been found. The supply was not surface water gathered in the vicinity, but was brought from a distance. The unique position of Glauce, which is best appreciated when it is compared with the Corinthian fountain of Pirene, warrants this conclusion. The latter lay low in a hollow under a projecting ledge of conglomerate, and it had an abundant watershed to which the acropolis contributed. The Greeks simply recognized a natural reservoir and by opening up conduits in the clayey soil under the conglomerate developed latent possibilities of water supply. Water in front of Pirene still covers the hard pan. With Glauce, however, it was quite different. Instead of being situated under a ledge it was cut in the top of one where no spring existed and it did not have a watershed like Pirene.² Only from the south and southwest could water have come, and what did come was below the floor. The well dug at a late

¹ See Göttling, 'Die Quelle Pirene auf Akrokorinth und das Kraneion unterhalb Korinth,' *Arch. Ztg.* II, 1844, pp. 320-330.

² The conduit which brought water to Glauce must have had an uninterrupted gradual slope toward its destination. This was a characteristic of early Greek conduits. The principle of forcing water up by means of water-tight pipe lines seems to have appeared first in Hellenistic times. Cf. Weber, *Jb. Arch.* I, XX (1905), p. 209.

date just behind the Roman wall (Fig. 4) has a depth of 4.35 m., and at this depth three tunnels reach out to gather the water. The depth of water-level beneath Glauce is explained by the fact that the rock falls away toward the acropolis. The strata of the rock incline the same way. The site of Glauce was chosen without regard to a watershed. The supply came from some spring, perhaps, as has been suggested (*A.J.A.* IV, 1900, p. 461), from that at the base of Acrocorinth, where to-day the water is abundant and good. A confirmation of this opinion is afforded by the evident contrast in quality between the water that flowed to Pirene and that which supplied Glauce. The water of Pirene has left a deposit on the walls of the chambers, but the walls and floors of Glauce show only the very slightest trace of any incrustation. Pirene depended upon the percolation of subsurface water, and by this process were gathered those ingredients which so completely and so obstinately concealed and preserved the Roman painting which has been found on the walls of its reservoirs.

According to the ancients (Strabo, VIII, 379; Pausanias, II, 5, 1), water flowed from the spring near the summit of the Acrocorinth to the spring at the base of the hill, which, as has been said, may have been one of the sources of Glauce. Their characterization of this water and that of Pirene is interesting. The spring on the summit, says Strabo, was full of transparent and potable water; on the other hand, Pausanias says that the water of Pirene, though pleasant to the taste, was used in the tempering of bronze, and he attributes the distinctive color of Corinthian bronze to the nature of the water. In the days when conjecture identified the Bath of Aphrodite with Pirene, Götting suggested that the ochre-like deposit may have given a color to bronze (Frazer's note on Pausanias, II, 3, 2). Periander, therefore, if he was the builder of Glauce, rendered the Corinthian public a service by bringing to the heart of the city water which offered no attraction to coppersmiths.¹

¹ "Although Strabo and Pausanias agree in regard to the reported communication between the well of the Acrocorinthus and the fountain Pirene of the lower city, they differ as to the position of that lower fountain. Pausanias describes it as on the road from the Agora to Lechaeum, Strabo as issuing from the foot of the Acrocorinthus; and thus it appears that there were three sources at Corinth all of which at some period of time at least, were known by the name of Pirene.

The problem presented by the roof of Glauce is a troublesome one. There are two beds for walls, the interpretation of which is made difficult by the fact that large portions of the roof are gone. One of these wall beds, 0.55 m. wide, is carefully cut along the back edge of the cube, but so much has been broken away that one cannot say how far it extended. (Fig. 4). This bed ends toward the east at a roughly cut block of living rock which rises 0.90 m. above it, and happily gives a clew to the height of the wall. The vertical surface of the block for a distance of 0.60 m. from the top has been smoothed in contrast to the portion below and behind the line of the wall. The wall was thus 0.60 m. high. A gutter, perhaps Roman and similar to the long one on the platform, ran along inside toward the west. The second wall bed, 0.50 m. wide, and 7.25 m. in front, runs parallel to the first and was made by cutting away the rock on either side to a depth of 0.13 m. (Fig. 13). In front of this raised bed, as far as the broken edge and behind for a distance of 1.25 to 3 m., the roof is even enough, but farther back there are deep quarry cuttings. A large block of living rock $1.80 \times 1.25 \times 0.50$ m., still remains. How far west the forward bed extended is uncertain. It breaks off over the partition wall between II and III, beyond which the roof, apparently at a later date, has been more deeply quarried. The base of the raised bed is 0.60 m. higher than the other. That a wall stood on the raised bed at some time is clear from the presence of cuttings for a door 0.50 m. from the east end. When Glauce became a house and a third story was added, these wall beds must have been in use. Whether the raised

All the three are still observable; namely, the well in the Acrocorinthus, the rivulets which issue at the foot of that hill, as described by Strabo, etc. (Leake, *Morea*, III, p. 242.) Tozer (1893), *Selections from Strabo*, p. 218, note 1, does not share Leake's opinion, but regards Pausanias's definition of the location of the lower spring as more exact than Strabo's. According to Tozer, both meant the same spring; but the words of Strabo: $\tauὴν πρὸς τὴν μίζην τοῦ δρόντος κρήνην ἐκπέντε εἰς τὴν πόλιν$ apply to the spring which Leake selected rather than to the Pirene near the Lechaeum road. For the former lies at the foot of Acrocorinthus, from which it could flow out to the city, while the latter is not situated at the base of the mountain (though it lies in a city which is $\piρὸς αὐτῇ τὴν μίζην τοῦ Ἀκροκορίθου$), but so low in the heart of the city as to be unable to flow out to it. The conduits leading from the hypaethral Pirene appear to have been drains rather than carriers of excess to be used elsewhere.

bed belongs in that period is a question, but the character of the other is too good to warrant this supposition. It is suggested that this wall belonged originally to the finished form of the roof. From the high ground 50 paces back of Glauce (Fig. 13), where hard-pan lies near the surface, the roughly quarried sloping roof is plainly visible. It may not have been so scarred in early Greek times, but if a wall 0.60 m. high were restored on the back bed, the roof as far as the raised bed would disappear from view. Evidence for this wall has been



FIGURE 13.—VIEW OF ROOF FROM THE SOUTH.

noted above, and is strengthened by the fact that a piece of the wall itself has been identified — the poros block 1.50 m. long, 0.40 m. wide, and 0.60 m. high, which lies on the cross wall in IV (Fig. 4 *B*). The dimensions meet the requirements, and the bottom was prepared for a bed. The finish of the top shows that another course was not laid upon it. The outer face hacked in horizontal bands is characteristic of blocks in Glauce, and the inner face is very rough.

GLAUCE IN THE ROMAN PERIOD

It is probable that soon after the Roman reoccupation of Corinth the fountain was repaired. The chief feature in the

Roman repair was the cross wall in IV, which was placed at a point where the chamber walls survived to the necessary height. The bed for it was cut deeper at the west end to get rid of the slope of the floor. The part of IV behind the wall was filled in at once, for that side of the wall was not intended to be seen (Fig. 4). Two coats of stucco at different times were applied to the wall, and later a third was added which was extended to all surfaces, except the floors, that came in contact with the water. The hard Greek cement was picked (Fig. 1) that the inferior Roman might be more adhesive.

The parapets were lowered, the long one 0.35 m., the short one, in front of VI, 0.48 m. The Greek excess escape was thus made useless. The Roman level in front of Glause, after the quarrying there, was that of Greek times, if the channel (Fig. 1 *K*) at the northeast corner determines the latter. The filling is uniform, without trodden layers, up to the level of the first Roman step. The present steps are probably not Greek. Those extending north from the sixth reservoir vary in height from 0.27 m. to 0.33 m., the others from 0.24 m. to 0.25 m. The only indication that a flight of steps existed here in Greek times is the presence of a pilaster facing north (Fig. 2). This may imply another colonnade, but no traces of pillars have been found. The present flight seems not to have been cut with reference to the pilaster.

The source of water supply in Roman times calls for brief mention. As yet no traces of the Roman conduit that brought the water have been found, but it was only natural that those who repaired the fountain should make use of the Greek source. There is an argument of some weight in favor of the view that there was no change in the source of supply. Pausanias mentions no spring on the ascent to Acrocorinth. The argument from silence in the majority of cases is indeed of doubtful value, but in this instance it is significant, and the following remarks of E. Curtius (*Ges. Abb.* I, p. 117) are worth quoting: "Begleiten wir Pausanias auf seinen Wanderungen durch Griechenland, so finden wir, dass er für den Bau des Landes kein Auge hat; er übersteigt die Hochgebirge, ohne sich um ihren Zusammenhang und um ihre Höhe zu kümmern; er nennt nicht einmal die Namen, während er bei der kleinsten Quelle

verweilt und von ihrer Beschaffenheit und ihrer Verehrung Auskunft giebt." Perhaps the inference then is that water was not available as it is now close under the Acropolis near the modern ascent, but that it was conducted by conduit to Glauce. The passage in Strabo (VIII, p. 379) does not militate against the inference. Though he says there was at the foot of the Acropolis a *κρήνη*, he also tells us that enough flowed to the city to afford a sufficient supply. The words *ώσθ' ικανῶς ἀπ' αὐτῆς ὑδρεύεσθαι* point to a system of some size. The *κρήνη* Glauce not far away needed only a cross wall in one chamber to be ready to receive the sufficient supply somewhat vaguely defined by Strabo as *ἐκρέονσα εἰς τὴν πόλιν*. When Glauce fell into disuse, the old source furnished water at a point higher up, near the Turkish and modern spring. Such has been the usual fate of Greek conduits.

Some time later two openings were made through the Roman transverse wall in IV (Fig. 5), both seemingly testifying to a search for water. The one at the left suggests a quest in the line of the Greek gutter. It was poorly cut from in front. The west opening with its false arch was made probably to give access to the well immediately behind. This too was roughly cut at floor level from in front, and the threshold is a thin piece of the lowest course of the wall which escaped removal, because it lay in the cutting in the floor. The back part of the wall was torn out to facilitate the sinking of the well, which belongs to the period when Glauce was used as a house. But that this degradation of the fountain to alien purposes occurred only after many centuries of service is another tribute to the excellent character of Greek construction.

II. THE KINSHIP OF FOUNTAINS IN THE PERIOD OF THE TYRANTS

The development of the Greek water conduit and the contribution which one system makes toward the interpretation of another are themes best considered together. It is to be regretted that the excavation of the Pirene of Periander and of the fountain at Megara has not been completed and that the Enneacerunus is merely a name. But even so the meagre materials repay comparative study.

The obvious distinction has been formulated that, while Greek water conduits were regularly placed underground, oftentimes at a remarkable depth, the Romans carried their supply frequently long distances above ground by means of arched aqueducts. To explain the practice of the Greeks it has been suggested (*cf.* Gräber, *Ath. Mitt.* 1905, p. 21) that underground conduits were less easily destroyed in time of war, though the supply might be cut off as the Athenians cut off that of the Syracusans (Thucyd. VI. 100), and that the water in them was kept cooler. It seems a question whether this suggestion gives original motives or simply states inherent advantages subsequently recognized. Still more doubtful is the poetic explanation (*cf.* Daremberg and Saglio, I. 338, *s.v. aquaeductus*) according to which the Greeks, observing mountain streams disappear and later reappear fresh and cool, imitated natural subterranean courses when they constructed conduits, nor can it safely be believed that the Greeks followed the example of the Phoenicians in choosing one of two simple alternatives for the delivery of water. The problem may well have been worked out on Greek soil. A more primitive means of getting water could hardly be imagined than that shown by the pre-Pisistratean system at Athens. Here first a number of wells were dug with short arms reaching out to gather the water. Then wells lying close together were connected. This is the story of that curious network of wells and tunnels marked *T¹-T⁷* on the plan (Gräber, *l.c.* pl. I). The next step was to prolong a tunnel to an outlet below a natural terrace whither the water flowed of its own accord and could be stored in a rock-hewn basin. Traces of such a reservoir are still to be seen in the Pnyx rock. It was destroyed by Pisistratus to make room for the larger and more elaborate Enneacrunus. Such were the beginnings of the underground conduit at Athens.

In other places, like Corinth, it is equally obvious how the underground conduit came into being, and here by a different method. The early inhabitant saw water trickle forth from beneath ledges of conglomerate and sought in time to increase the supply by digging in the clayey soil at the point where the water issued. Later came the extension of such channels

under the conglomerate with branches that gathered the water from a wide area and brought it to a basin or a group of basins. This is essentially the story of Pirene.

Pisistratus had a precedent for his great underground conduit. It may be regarded as the extension, the elaboration, of the early Athenian system. Between the two came the Megarian, which, according to Gräber, was the model for the Athenian. The great system of Pisistratus, like that of Theagenes, shared the character of the pre-Pisistratean work in that it collected

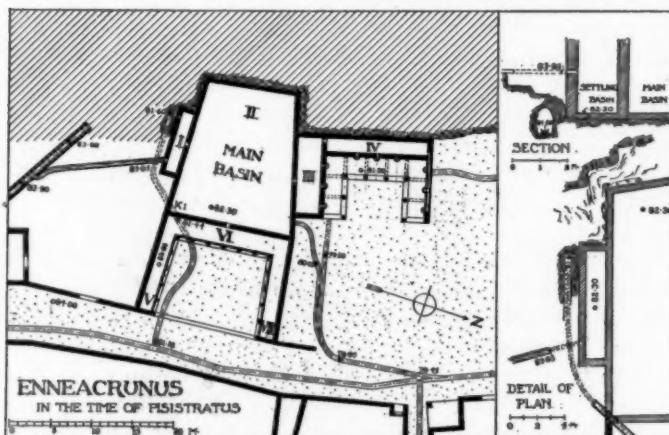


FIGURE 14. — ENNEACRUNUS.

subterranean water, both that which came from small springs and the surface percolations which find their way to a certain level in natural reservoirs and there accumulate.¹

Whether the water poured immediately from the conduit into the larger chambers of the fountain is a question definitely answered in the case of the Enneacrunus. Like the ancient

¹ "Gerade wie die athenische nimmt auch die megarische Wasserleitung keine Rücksicht auf die Flussläufe in den Ebenen. Es ist das verständlich weil die Stollen kein Flusswasser aufnehmen, sondern nur das Grundwasser sammeln sollten, für dessen Höhe die Flussläufe fast ohne Bedeutung sind. Diese sind vielmehr fast das ganze Jahr hindurch ohne Wasser und bilden nur Abflussrinnen bei starken und längeren Regengüssen." (Gräber, *l.c.* p. 59.) These conduits therefore for long stretches of their upper courses had to be underground, and like the earlier system they continued underground to the outlet.

cisterns on the Aspis at Argos (*B.C.H.* XXXI, p. 152), the Enneacrunus had a settling basin (Fig. 14, I, the plan is reproduced from Gräber's study) which first received the water. That its purpose was to prevent the heavier particles of sediment from getting into the large reservoir II is established by the existence of the drain which extends its full length. This drain, to have emptied II, need have reached only to K 1, but the prolongation of it indicates that it must have served the special purpose of carrying off the contents of I without disturbing the water in II. The operation was as follows. All water poured into I cleared itself in passing the length of that reservoir to the inlet into II, and thence flowed to the spouts and the basin where it could be drawn. When it was necessary to clean the settling cistern, the water must have been diverted by means of some channel to II, and on occasion must even have passed by that reservoir to either the spouts or the draw-basin. Of such a channel a bit is perhaps preserved in a heavy block of which one face is stuccoed (Gräber, *l.c.* Fig. 32). When the water poured directly into II, it was possible to empty I, clean it completely and quickly with the help of the drain, plug the drain holes and turn the water again into it. The obvious advantage of this device was that the supply need never be interrupted, and that much of the sediment could be kept from the great reservoirs where its removal meant more work. When the pipe line in the conduit was cleaned (Gräber, *l.c.* p. 24) such a cistern must have been of especial service.

The earlier fountain of Theagenes at Megara seems to have been similarly equipped. The plan (Fig. 15 = *Ath. Mitt.* XXV, pl. 8, with modifications) shows that a channel ran along the west side, presumably from north to south, at the height of the socle. It is conjectured that this was a drain from a settling basin rather than a means of carrying fresh water to a fountain of spouts which normally is arranged to provide for an overflow from the reservoirs and ought not to tap the supply before it reaches them. The Greek channel on the east face of Glauce (PLATE III, Fig. 3) would at first sight seem to have served a similar purpose and to have led to the tunnel beneath the platform and thence to the fountain drain. The levels, however,

show that the water ran the other way, and that the tunnel was merely cut through the channel which carried water from the front, probably excess, to some cistern behind the fountain.

The Corinthian fountain helps in the interpretation of the Megarian. The ground plan of the latter (*Ath. Mitt.* XXV, pl. 8) shows two reservoirs, a large one at the back and a narrow one in front, from which the water was taken. From

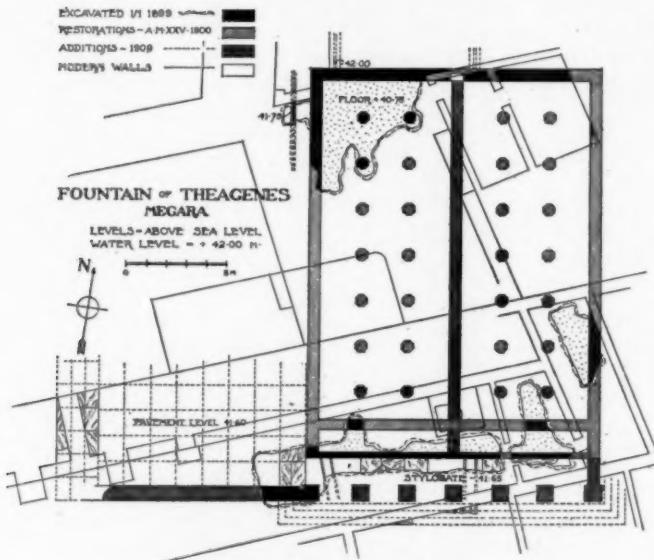


FIGURE 15.—FOUNTAIN OF THEAGENES.

the latter, two drains, one at the east end, the other just beyond the middle, seem to have converged to a common point. The extravagance of two drains from the same reservoir raises the suspicion that it was really not a single basin. The trench unfortunately has been filled in, but the plan shows a piece of a block just to the left of the second drain, and this may have belonged to a short wall which lay exactly in the major axis of the building (Fig. 15), and would consequently have divided the narrow reservoir into two equal parts. Each of these would then have a drain. On this probability hinges yet another,

namely that the octagonal shafts in the major axis should be placed on a low solid wall of the same height as the partition wall between the front and back reservoirs. This conjectured division, which excavation could readily test, would have made it possible to fill and empty the fountain one half at a time—a great advantage. If the plan in the publication is correct, the cleaning of the reservoirs meant that for a period of time no water was available. If the conjecture is accepted, then the further assumption must be made that there was a channel to carry water to the right half when the left was empty. The arrangement of two independent systems under one roof is illustrated by the Corinthian fountain.

Glauce was indebted to the Megarian system for an important detail which it modified. The solid wall between the front and back reservoirs is confined to two of the four large chambers (II and III) in Glauce, but the upper course, which extends across the other two chambers, completed an interior stylobate for shafts and pilasters (Fig. 11). The excavators at Megara found fragments of half columns which occupied a corresponding position. The origin of this wall, which became a feature in fountain construction, continues obscure, unless it can be proved that the narrow front reservoir might be full, while a part of the large reservoir behind was empty.

There is evidence that the Megarian, like the Corinthian fountain, had a portico. On the plan of the former, 1.75 m. in front of and in line with the west wall, one sees a block, 0.05 m. below the level of the platform. This may mark (*Ath. Mitt. l.c. p. 32*) the position of a pilaster in a row of columns along the outer edge which brought the front of the building into line with an adjoining one. Two blocks of the steps are to be seen embedded in the basement walls of the houses, where they serve the modest purpose of shelves.

The restoration of the roof starts with the fact that a remarkable number of columns (*κρήνην . . . ἐς τὸ πλήθος τῶν κιόνων θέας ἀξίαν*)¹ supported it. This implies a ceiling of stone slabs like that of the city fountain of Pergamon (*Ath. Mitt. XXVII, p. 38*). The height of the ceiling is known (5.50 m.), which is approximately the height in Glauce, where the measurements

¹ *Paus. I, 40. 1.*

vary from 5.45 m. (IV) to 5.58 m. (I) at the front, to 5.35 m. (IV) at the back. In the centre of the back wall of the Megarian fountain, 4.62 m. above the floor, is a rectangular hole 0.85 m. wide, 0.45 m. high, and 0.35 m. deep, and at the back of this is a block of poros; the rest of the wall is composed of hard blue limestone. The position of this hole at the end of the central row of columns indicates that it received a beam surmounting the columns. Upon this beam would have rested the cross beams, 2.33 m. long and 0.43 m. thick, which reached across to the octagonal columns and supported the stone ceiling. Only by such a restoration as this does it seem possible to explain the course, 0.43 m. high, which lies above the beam hole. The columns in the major axis were shorter and perhaps thicker than the others (0.50 m.), judging from the width of the beam hole (0.85 m.). Whether there was a gable above the ceiling is uncertain.

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UNPUBLISHED INSCRIPTIONS FROM LATIUM¹

1. On the upper part of a marble altar, now hollowed out as a receptacle for chicken feed, in a house in via della Fontana, No. 12, Palestrina:

F O R T V N A E // N . V I I I //
P R I M I G E N I A E

2. A small marble basis, now on the steps leading to the lower level of the Barberini gardens, Palestrina. The lettering seems to date from the third century A.D.

I O ▼ V I
O P T I M O
L T A P O N I V S
M I T H E R E S
C V M P A T R E
D D

Aponius is a rare nomen in Praeneste and does not appear among the *pigna* inscriptions. An Aponius appears as a quaestor in the list of municipal officials given in *C.I.L.* XIV, 2966. There is one other Aponius mentioned in *C.I.L.* XIV, from Ostia, 256, 91.

3. A travertine *pigna* from Palestrina. Height, 0.24 m. The inscription is on the shoulder of the *pigna*. Now in the Johns Hopkins University Museum, Baltimore.

A L B I N I V S 0.01 m.

¹ The inscriptions here published were gathered while I was Fellow in Classical Archaeology in the American School of Classical Studies in Rome in 1906-1907. I take this opportunity to thank Professor Richard Norton and Director Jesse B. Carter for their courtesy and assistance to me during my year of residence in Rome.

American Journal of Archaeology, Second Series, Journal of the Archaeological Institute of America, Vol. XIV (1910), No. 1.

4. A travertine pigna from Palestrina. Height, 0.38 m. Leaf pattern on throat and shoulder of the pigna. The inscription is on the lower part of the cone. Now in possession of Professor H. L. Wilson, Johns Hopkins University, Baltimore.

CAMELIA 0.02 m.

5. A travertine pigna from Palestrina. The inscription is on the cone. Now in private possession in Palestrina.

L · C A R M O P · S

6. A large fragment of marble in the garden of Signor Sbarrella, Palestrina. The lettering is good, apparently of the first century A.D.

cor	\ N I F I C /	0.07 m.
co	\ R N I F I C /	0.04½ m.
c	\ A E C I L I /	0.04 m.

7. A broken piece of marble from Palestrina. Now in private possession there. The lettering is late.

C · C R I S A R I O
D ~~X~~ · L · T O D E I O
V · F · P · S

An X is cut across the E in line 2, but if meant to erase the E, the method is unusual.

8. A travertine pigna from Palestrina. Height, 0.33 m. The inscription is on the base. Now in the Johns Hopkins University Museum, Baltimore.

C · F A B I V S 0.02 m.

9. A travertine pigna from Palestrina. Height 0.23 m. The inscription is on the cone. Now in possession of Professor J. L. Moore, Vassar College, Poughkeepsie, N.Y.

Both the cutting and the form of the name make it almost certain that the inscription is not ancient.

G · I R E N I A · P · S

10. Part of a marble statuary base, with one foot of the statue still remaining. Reported found on the Via Praenestina, two miles from Palestrina. Now in the Johns Hopkins University Museum, Baltimore.

The inscription seems to be modern.

IVLIA MAMEA · M · TIT

11. A travertine pigna from Palestrina. Height, 0.27 m. The inscription is on the base. Now in possession of Professor J. L. Moore, Vassar College.

L · C · LIBERTI

12. A travertine pigna from Palestrina. Height, 0.40 m. The inscription is on the cone and is probably not ancient. Now in private possession in Palestrina.

D · MAGNIVS

13. A travertine pigna cone from Palestrina. Height, 0.18 m. Now in the Johns Hopkins University Museum, Baltimore. The inscription is probably not ancient.

M · MASSESIS · V

14. A travertine pigna from Palestrina, with inscription on the cone. Height, 0.22 m. Now in possession of Miss Helen Tanzer, New York City.

MAIO · PETRONIA · M · F

15. A fragment of limestone set into the wall of the municipal building, Palestrina.

L · PHILIPPVS

The second line of the inscription shows the top half only of letters which appear to be DIII DVO. The first stroke of H in *Philippus* is not cut on the stone.

16. A small piece of travertine moulding set in the wall of a house in vicolo dell' Arco, No. 11, Palestrina. The cutting seems ancient, but the letters find no explanation.

PRIOFIEPI

17. A travertine pigna base from Palestrina. Diameter, 0.24 m. Now in the Johns Hopkins University Museum, Baltimore. The L with oblique bottom stroke and the square open loop of P are clearly marked.

V · PVLLI · N · F 0.01 m.

18. A travertine pigna from Palestrina, with the inscription on the throat of the pigna. Height, 0.40 m. Now in the Johns Hopkins University Museum, Baltimore.

Q · PVIVS · V · F 0.05 m.

The open loop of P and acute-angled V should be noticed.

19. A large piece of marble (0.55 m. x 0.52 m.) with a rough band at the bottom, showing that it was set in a groove of some sort. The inscription was on at least three blocks of marble. This block is squared on the left side, but broken on part of the right side. Now in possession of Cav. G. E. Mora, Municipal Secretary of Castel Gandolfo.

an T O N I V 0.14 m.

S A B I N 0.12 m.

A E T O R 0.09 m.

The left half of the crossbar on the T and the last stroke of the V in the first line do not appear on the stone. The inscription shows round O, square N, I longa, and T with a long crossbar. The lettering is of the finest monumental style.

20. A large marble cippus in front of palazzo Rospigliosi in Zagarolo.

S I L I A E · E A R I N E

V I X · A N N · X X I X

D I E B . V I

M A T E R

P I E N T I S S I M A

21. A marble tablet (0.47 x 0.30 m.) from Palestrina. Reported found at Castiglione. Now in private possession in Palestrina. The lettering is late.

M · S T A T I V S · M · L I B 0.04 m.

G L A P H Y R · E T 0.03 m.

P O M P E I A C N · L · F E L I C V L A 0.03 m.

F E C E R V N T · S I B I · E T · L I B E R T I S 0.02 m.

P O S T E R I S Q · E O R V M · Q V A M R E M 0.02 m.

I N · F A M I L I A · N O M I N I S · S V I · E S S E 0.02 m.

D E S I N A R V N T 0.01 m.

The form here is somewhat different from that in any of the *iura sepulcrorum* given in Bruns, *Fontes* (6th ed.), chap. XI, p. 334 ff. It is difficult to supply the proper antecedent for *quam rem*, which is perhaps *aedicula*, *ara*, or *area*.

The earlier forms of the verb are *ne . . . exeat*, or *ne . . . perveniat*, and the form here used, *esse desinarunt*, is worthy of notice. DESINARVNT seems to be a mistake for DES(T)INARVNT. From Ostia, *C.I.L.* XIV, 1452, comes an inscription which should be mentioned in connection with this one: *libertis · libertabus · posteris · que · eorum · ex · familia · nominis mei* | etc.

22. A travertine pigna from Palestrina, with inscription on the cone. Now in private possession in Palestrina. Doubtless modern.

T · V R I F I T E

23. A travertine pigna from Palestrina. Height, 0.19 m. The inscription is on the base. Now in my possession. The inscription is probably not ancient.

T · V I B V L I A E

24. A travertine pigna from Palestrina. Now No. 21 in the collection of the new Municipal Museum in Palestrina.

MAIO · VO^{lu} MINIA

The index of *C.I.L.* XIV shows both Volumnius and Volumnia from Praeneste.

25. A marble base in a house in via della Fontana, No. 12, Palestrina. The inscription is not ancient.

S · I · S · + · S B R
M E N T E · P V R A · D E O.

26. A fragment of marble set into the wall at the entrance of the Fiumara house, Palestrina.

I A
I V S
V R I

27. The lower part of a broken marble cippus set into the wall of the municipal building, Palestrina.

S V A I
N T
V I V A S

One letter appears at the top of the cippus over SV in the second line, which seems to be a G. The inscription is in three pieces.

28. A travertine pigna base from Palestrina. Now No. 22 in the collection of the new Municipal Museum in Palestrina.

O R T V

The last stroke of the V does not appear on the stone.

29. A small piece of marble from Palestrina. Now in the garden house of the lower Barberini palace in Palestrina.

V E L I B
A B
W
Q

Marble fragments lying in the inclosure of the new Municipal Museum in Palestrina.

30.	31.	32.
C O C I A	A L A	V M · Q
		X V I I I I · S I I
33.	34.	
I O S · I I I -	G X X	

Brick stamps lying in the inclosure of the new Municipal Museum in Palestrina.

35.	36.
C A E C I	L I C I N I L F C C E S S I A N I
37. L I C I N I L F C C E S S I A N	In Municipal Museum, No. 3.
38. C · P R O P I F E L I C	In Municipal Museum, No. 4.

39. C A L L I S T V S In Municipal Museum, No. 23.
C O C C E I N E R V A E

40. T V D I / E P R M A E

The lower half of the first four letters is broken off the brick.

41. H E R M E + S

42. E B V I A N O I
P R D O M I V C . E

Nos. 41 and 42 are now in the possession of Signor Tommasi, Palestrina.

Inscriptions on the bottoms of lamps from Le Tende, near Palestrina.

43. L . F A / R I C N !

44. L . M A D I E C

45. C O P P I . P . F

Nos. 43-45 are now in Johns Hopkins University Museum, Baltimore.

CORRECTIONS FOR THE *C.I.L.*

C.I.L. XIV, 2835, should read:

T I . C L A V D I O
A V G . L . P H O E B O
A N T O N I A N O
S I B I . E T . L I B E R T I S
L I B E R T A B V S Q V E

The inscription is now wholly above ground.

C.I.L. XIV, 2849: now No. 7 in the Palestrina Municipal Museum.

C.I.L. XIV, 2851: now No. 19 in the Palestrina Municipal Museum.

C.I.L. XIV, 2857: now in the courtyard of the Seminario, Palestrina.

C.I.L. XIV, 2872: purchased by me in Palestrina, and given to the Municipal Museum, where it now is.

C.I.L. XIV, 2879: a small travertine pigna basis, now No. 20 in the Palestrina Municipal Museum. The inscription should read:

· · · · G · M A G · C O I R
 · · · · N D E R · P L A V T I V S · L · M ·
 · · · · N V S · C O R D I V S · A · S · F · P

The letter P in lines 2 and 3 has an open loop, and the points are all triangular.

C.I.L. XIV, 2886: now in the yard of the municipal building, Palestrina.

C.I.L. XIV, 2889: now in the vestibule of the municipal building, Palestrina.

Line 4 should read: CYP A E R V S

Line 7 should read: CYP A E R V S · F I L I V S

C.I.L. XIV, 2890. The size of the block, which is probably an altar, is 0.64 m. x 0.46 m. x 0.25 m. It is now No. 35 in the Palestrina Municipal Museum.

C- in line 1 should be C-

C.I.L. XIV, 2907: on the front of the cippus are two figures supporting a half wreath which hangs between two small capitals adorned with cornucopiae.

Line 2 should read: QVINTVS

C.I.L. XIV, 2930: now in the wall of the municipal building, Palestrina.

Line 4 should read: (cut to be made)

C.I.L. XIV, 2921: now in the garden of the municipal building, Palestrina.

C.I.L. XIV, 2946: now No. 34 in the Palestrina Municipal Museum.

C.I.L. XIV, 2978: now set into the wall of the municipal building, Palestrina.

Line 6 should read: LAV, etc.

C.I.L. XIV, 2997: now on the steps in the lower Barberini gardens, Palestrina.

C.I.L. XIV, 3002: in lines 5, 6, and 8 the letter P has the open loop.

C.I.L. XIV, 3016: now set in the wall in the entrance to cathedral of S. Agapito, Palestrina.

C.I.L. XIV, 3031: line 6, LIBERTAS should read LIBERTAS.

C.I.L. XIV, 3336: now set into the wall of the municipal building, Palestrina.

C.I.L. XIV, 3344: the size of the block of marble is 0.33 m. \times 0.27 m. \times 0.07 m. The letters are 0.02 m. in height, and very poorly cut and irregular. Now No. 13 in the Palestrina Municipal Museum.

In line 1, DIS should read DIS.

C.I.L. XIV, 3354, 3358, 3360, 3387, 3390, 3407, 3411: all now set into the wall of the municipal building, Palestrina.

C.I.L. XIV, 3415: now set in the wall at the entrance to the cathedral of S. Agapito, Palestrina. Throughout the inscription A should be A, and in line 1 NVNCVPABITVR should read NVNCVPABIT/R.

C.I.L. XIV, 3421 *a* and *c*, 3424, 3425, 3427, 3427 *a*, 3429, 3430: now set into the wall at the entrance to the cathedral of S. Agapito, Palestrina.

Not. *Seav.* 1903, p. 580. *a*, *b*, and *c* are now Nos. 31, 28, and 29 respectively in the Palestrina Municipal Museum. The first line of *c* should read DVINCIA.

Not. *Seav.* 1903, p. 580 (*Röm. Mitt.* XIX, 1904, p. 151): now No. 27 in the Palestrina Municipal Museum.

Line 3 should read: L · NERIANVS · TERTIVS · PRAECO · APPARITO *r*. All P's have the open loop.

Line 6 should read: FRATRES. The stone is in ten fragments.

MISPRINTS NOTED IN THE *C.I.L.*

In *C.I.L.* XIV, 2836 *a*, for Petrini p. 316, read Petrini p. 360; *ibid.* 3339, for Petrini p. 35, read Petrini p. 358; *ibid.* 3351, for Petrini p. 174, read Petrini p. 374; *ibid.* 3373, for Petrini n. 5, read Petrini n. 55; *ibid.* 3384, for Petrini n. 6, read Petrini n. 86; *ibid.* 3390 for Petrini n. 47, read Petrini n. 77; *ibid.* 3427, for Petrini n. 5, read Petrini n. 85; *ibid.* 261*, for Cecconi p. 69 read Cecconi p. 60.

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GREEK INSCRIPTIONS FROM THE NEGEV

Of the following inscriptions all but three were discovered in a necropolis north of Ruhébeh on the second and third of June, 1905. The Antipater inscription and the two shorter ones were found a week later at Beersheba. Ruhébeh is, no doubt, identical with the Reḥoboth of Gen. xxvi, 22, where Isaac is said to have dug a well. Possibly the town figures under the name of Rubuta in the Amarna correspondence (182, 183, and 239). It was known to Josephus as *Poωθωθ* (*Ant.* I, 18, 2). In the Graeco-Roman period its name seems to have been Robatha. According to the *Notitia dignitatum*, 72, 11 and 73, 27, there was a garrison of *equites sagittarii indigenae* at Robatha; and *Poθaθa* likewise occurs in the *Rescript of Beersheba* (No. 8). The loss of the guttural, suggested as a difficulty by Clermont Ganneau (*Revue Biblique*, 1896, p. 426), is no more serious than in *Poωθωθ* (Josephus, *l.c.* and Eusebius, *Onom.* 142, 14). In either case it was undoubtedly due to the tendency to weaken and slur over this guttural in pronunciation. Why the place should be looked for east of the Arabah is not apparent, when Thamara, Praesidion, Eiseiba, and Moa, are certainly in the Negeb.

The first of the inscriptions was found by Mr. John Whiting, of Jerusalem, who accompanied our party. Squeezes and copies were made by myself and my students in the American School for Oriental Study and Research in Palestine during the year 1904-1905, Dr. A. T. Olmstead, Mr. B. B. Charles, and Mr. J. E. Wrench, and the squeezes are now at Cornell University. The small limestone steles on which they were cut ranged in height from six inches to two feet. All were left *in situ* except two that were handed over to the ḫaim-makam of Beersheba, and the discovery was reported to him and to the mutaṣarrif of Jerusalem. In addition to those given

below, a number of others were copied which are not published here, as they had already been seen by members of the Dominican School in Jerusalem and published in the *Comptes Rendus* of the *Académie des Inscriptions et Belles-Lettres*, 1904, pp. 298-305, and in *Revue Biblique*, 1905, pp. 245-275. The texts have been transcribed from the impressions and translated by Mr. Charles; the bracketed notes on the chronology and other matters are mine.

1. A rectangular stele. Letters 1½ in. high. Lines separated by ruling.

† 'Averáe ḥ Mapía "Hvvn̄s ἐν μη(vi) Δίον κδ' ωδ. α' ἔτους νοζ' †

"Mary, daughter of Anna, died on the 24th of the month Dios of the year 477, in the first indiction."

"Hvvn̄s, a late form of "Avva. Cf. "Evn̄ in Dussaud et Macler, *Voyage archéologique au Ṣafā et dans le Djebel ed-Druz*, No. 83.

[The era used at Robatha-Ruhēbeh in the period when these epitaphs were written was that of the province of Arabia, beginning on the 22d of March, 106 A.D. Indiction I began Sept. 1, 582 A.D. The 24th of Dios, 477, was the 15th of November 582 A.D.]

2. Stele with circular top and rectangular base. Part of base with inscription broken off. Letters from 1½ to 2 in. high. Inscription around circumference of top :

† Meni Ξανθί(κοι) ἐκ τοῦ ἔτους υπά'

"In the month of Xanthikos of the year 451."

Inscription on base :

† 'Aver(a'η) ἐ Ma[ρία] Mapías
"Mary, daughter of Mary, died."

[Xanthikos 451 = 22 March to 20 April, 556 A.D.]

3. Rectangular base of a decapitated stele. Letters 1 to 2 in. high.

† 'Averáe Xáperos Zováirov μη(vi) Δεσίον ἵνδικτων γ'

"Charitos, son of Zonainos, died on the 10th of the month Daisios, in the third indiction."

With Xapetós cf. Xapítov in Dussaud et Macler, *l.c.* No. 96. Zováirov appears in the form Zovinov on one of the steles published in *Comptes Rendus*, *l.c.*

[The 10th Daisios would be the 30th May. The use of the induction only without the year of the era occurs not seldom on these funereal steles.]

4. Letters well cut, from $\frac{3}{4}$ to $1\frac{1}{4}$ in. high.

† Ἀναπάτε ὁ μακάριος Στέφ(ανος) Φελουμήνη †
μη(νί) καλανδῶν κθ' ἔτους υρε'.

"Blessed Stephen, son of Philoumene, died on the 29th of Kalends in the year 495."

Φελουμήνη must be for Φιλουμένης, unless, indeed, it be a still greater slip and meant for Φιλουμενοῦ. If intended for Φιλουμένης, we must explain it either as the inadvertent omission of ο, or as a modern Greek form of genitive without ο, coming into use at this early period.

[This is the only inscription known to me where the term Kalends is used as the name for the first month of the year. According to the *Hemerologium* taken from a copy of the Florence manuscript of Theon's commentary on Ptolemy and published apparently from the papers of Sainte-Croix in *Histoire de l'Académie Royale des Inscriptions et Belles-Lettres*, XLVII, 1809, pp. 66 ff., the Arabic year began, after the five epagomenae, with the month Xanthikos. It is not impossible that a new year's festival was celebrated in Palestina III at this time like the ἑορτὴ τῶν Καλανδῶν, against whose orgiastic character Asterius preached in Pontus and which Libanius described (cf. Ideler, *Handbuch d. mathematischen und technischen Chronologie*, 1826, II, 334), especially as it came at the vernal equinox. The 29th Kalends of the year 495 is, no doubt, the 19th of April, 600 A.D.]

5. Letters from $\frac{3}{4}$ to $1\frac{1}{2}$ in. high. Inscription around circumference of top:

† Ἀνεπάτε ὁ μακάριος Βίκτωρ

On the lower part of top and on base:

† ἐμενὶ Λόους ζ' ξβ' ζ' ινδ' ζ' γ' τοῦ ἔτους υντε'

"Blessed Victor died on the 22d of the month Loos, third induction, year 450."

[The 22d Loos, induction III, 450 = 10th August, 555. The sign ζ has by mistake come before ' rather than after it in the numerals indicating the year.]

6. A stele with circular top and rectangular base. No inscription on top. Letters on base clearly cut but not of uniform size. Height $\frac{5}{8}$ to $1\frac{1}{4}$ in.

† 'Αναπάε ἡ μακαρία 'Αζονε (ε)ν μηνὶ¹
 'Αρτεμισίου κέ ινδικτιώνος σ' ἑτούς υπερ'

"Blessed Azone died on the 25th of the month Artemisios, sixth indiction, year 483."

'Αζονη for 'Αζωνή.

[25 Artemisios, indiction VI, 483 = 15 May, 588.]

7. Letters from 1 to $1\frac{1}{4}$ in. high.

† ἐκυμ (ἡθη) ἡ μακ(αρία) Μαρία μην(νί)
 'Αρτεμισίου α' ινδικτιώνος ι'.

"Blessed Mary died on the first of the month Artemisios, in the tenth indiction."

ἐκυμ for ἐκοιμ.

[1 Artemisios = 21 April.]

8. Letters from $1\frac{1}{2}$ to $2\frac{1}{2}$ in. high. Deeply cut.

† 'Αζονε νίγα ηθαρα.

Perhaps the engraver meant to write 'Αζωνή νέα ἔθαρε,
 "Young Azone has died."

9. Stele with circular top and rectangular base. Letters from $1\frac{1}{8}$ to $2\frac{1}{2}$ in. high.

Inscription around the top:

'Αβραμίου Ν α

On lower part of top and on base:

ἀνεπά(η) 'Αβ(ράμιος) το(ῦ) μηνὸς 'Αρτημι(σίον)

"(The tomb) of Abraham, son of N. Abraham died in the month of Artemisios."

[Artemisios = 21 April to 20 May.]

10. Letters from $\frac{7}{8}$ to $1\frac{1}{4}$ in. high. Circular top badly weathered in places. Inscription around top:

'Ανεπά(ε) . . . μ . . . ν.

On the base:

† ινδικτιώνος γ' ἔτ(οντος) υπερ θ'

" . . . died in the third indiction, year 449."

[Indiction III began 1 September, 554 A.D.; the year 449,
 22 March, 554.]

11. The circular top of a stele. Letters from $1\frac{1}{2}$ to $2\frac{1}{4}$ in. high.

Θεμος Ἀβδερες Ζε.

“Thaimos, son of Abderes.”

Θεμος for Θαιμος. Ἀβδερες evidently a Semitic name.

12. Letters from $1\frac{1}{4}$ to 2 in. high.

✚ Ἀναπ(άε) Σεργίου.

“The child of Sergios has died.”

13. Letters from $\frac{1}{2}$ to 1 in. high.

✚ Ιωάννου Ἀλαφίρ.

“Alaphir, son of John.”

For Ἀλαφίρ, cf. Dusseau et Macler, *l. e.*, Nos. 25 b and 121 b.

ἘΑΝΘΙΚΟΣ.

14. A fragment. Letters from $1\frac{1}{4}$ to $2\frac{1}{4}$ in.

The upper line seems to contain the letters *κονε* and the second line *ενλα*. Perhaps the original reading was *μηνι* Ξανθικον ε' ἔτ(ους) νλα'.

“On the fifth of the month Xanthikos, year 431.”

[That would be the 26th of March, 536 A.D.]

15. A badly weathered base, 6×11 in. Letters $\frac{3}{4}$ to $1\frac{1}{4}$ in. high.

✚ Ἀνεπάε . . . μην(νι) Περιτίον ἔτος νοο' ✚

“ . . . died in the month of Peritios of the year 471.”

[Peritios, 471 = 16 January to 14 February, 577 A.D.]

16. A square stele, $12 \times 12\frac{1}{2}$ in. Letters from $\frac{7}{8}$ to $1\frac{3}{4}$ in. high.

Ἀναστάη ἡ μακαρία Ἀναστασία

“Blessed Anastasia died.”

17. The upper part of the circular top of a stele. Letters from $\frac{7}{8}$ to $1\frac{1}{2}$ in. high.

Ἀναστάη μακ(αρία) Μαρία μηνί Ἀ

“Blessed Mary died in the month of A

[Artemisios, Appelaeos, or Andynaeos.]

18. Stele with small circular top. Inscriptions on base. Letters $\frac{3}{4}$ to $1\frac{1}{2}$ in. high.

☩ 'Ανεπάε μακαρία Μαρία ☩
"Blessed Mary died."

19. A small stele; letters from $1\frac{1}{4}$ to $1\frac{1}{2}$ in., well cut.

☩ Σαουδ

A Semitic name found occasionally at the present day among Syrians. For names from the same root, cf. Johns, *Assyrian Deeds and Documents*, No. 175, pp. 402 f., and Lidzbarski, *Nordsemitische Epigraphik*, I, p. 380.

20. Fragment of a circle containing the letters *Moa* and *κτωρ*. The latter is doubtless *Βικτωρ*.

[Was Victor a native of Moa (*Moa*), *Madeba Map*, 88, *Rescript of Beersheba*, 13?]

21. Another fragment containing the letters:

Αονα

At Beersheba three inscriptions were found:

1. A fragment containing the letters

ΒΙ [Probably *βικτωρ*, Victor.]

2. A piece of limestone, six in. square. Badly weathered. Letters from $\frac{3}{4}$ to 1 in. high. What is visible is:

Β Η Θ Ε ☐
Ν Ο Β Κ Β Ρ Ι Ε
Σ Ι Ο Β Κ Α Ι Ν Η
Β Π Ε

This may be restored conjecturally as follows:

Βοηθε [Στεφα]νον Κυριε μ(ην) (Δε)σιουν
κα ιν(δ)η ετους υπε.

"Lord, help Stephen! The 21st of the month Daisios, indiction VIII, year 485."

[There is no doubt that the era of the Provincia Arabia is used. Indiction VIII began Sept. 1, 589 A.D. The 21st Daisios, 485, fell on the 10th of July, 590 A.D. E. Schwartz, "Die Aeren von Gerasa und Eleutheropolis," in *Nachrichten d. k. Ges. d. Wiss. zu Göttingen*, 1906, p. 390, calls attention to the fact

that, in the hitherto published inscriptions from Beersheba, the era of Eleutheropolis, beginning Jan. 1, 200 A.D., is more frequently used than the provincial era.]

3. The third inscription (Fig. 1) was found at the home of a scribe named Mustafa, where squeezes and photographs were



FIGURE 1.—INSCRIPTION FROM BEERSHEBA.

taken. It is engraved on a slab of marble now broken into two pieces. The original dimensions were 15 x 21 in.

‘Οφθαλμοί, τί τὸ θαῦμα; πότ’ ἐνθάδε κόσμος ἐτύχθη;
Τίς βροτὸς ήρα τὸ κάλλος ὃ μὴ πάρος ἀσπετος αἰών;
‘Αντίπατρος τάδ’ ἐτυξε καὶ Οὐρανὸν Ἰαθί δεῖξεν,
‘Ηνία χέρσιν ἔχων ἀρηφίλων στρατιών.

This inscription consists of four lines of hexameter verse. The most troublesome point is the word *Ιαθί*. In form this can only be an imperative, and if translated as such must be parenthetical, a prayer to Antipater as a deified hero.

“O eyes, what marvel! When was order established here?
What mortal found the thing of beauty which, before, an infinite extent of time had not discovered?

Antipater accomplished this, and (be gracious, O deified hero!)
 pointed the way to heaven,
 Holding in his hands for Ares the reins of his soldiers."

Or did the writer, doubtless a Semite, understand *תְּלָאָתִי* as an adjective meaning "gracious," so that we should translate "Antipater accomplished this and made heaven gracious"?

Dr. G. W. Elderkin points out as a most remarkable fact that *ἀφθαλμοί*, *τι τὸ θαῦμα*; *πόθεν* is found in Nonnus, I, 93 and *τι τὸ θαῦμα*; *πόθεν* in Nonnus, XLVIII, 602; and that these are the only passages in the whole range of epic literature where such an expression occurs. These correspond very closely with the *ἀφθαλμοί*, *τι τὸ θαῦμα*; *πότ'* of our inscription. As there can be no question of one influencing the other, we may have here a common borrowing from an unknown original of the Hellenistic age. Dr. A. T. Olmstead has suggested that the inscription was set up in honor of Antipater, father of Herod the Great. The character of the writing would lead one to expect a later period, yet all the forms would doubtless allow a date as early as the first century B.C. An Antipater in Idumaea, not far from Gaza, where Herod was born, and the only Antipater in that region, so far as we know, to whom such a eulogy could apply, is likely to be none other than Herod's father.

[The Antipater inscription is not an epitaph, but a poem engraved on a block of marble. It is the only inscription of its kind found in Syria. This gives it a unique interest. It was probably intended to celebrate the dedication of some notable monument in Beersheba. I would translate the four hexameters as follows:

"Eyes, what marvel is this! Such an ornament, how was it made
 here?"

What mortal devised this beautiful thing the world never saw
 before?

Antipater made it, and shewed how Uranus (gracious be he!)
 Holds in his hands the reins of the armies dear to Mars."

The poet expresses his amazement that such an ornament (*κόσμος*), such a thing of beauty (*καλλος*), as the wide world (*δύσπετος αἰών*) had never before seen, could have been made in Beersheba. The forms *έτυχθη* and *έτυξε* (for *έτευξε*) from *τεύχω* would make it possible to think of a work of either wood

or metal; but the last lines render it probable that it was an object of art cast in metal, possibly bronze. One naturally thinks of the famous masterpieces in Gaza described by Chorikios (ed. Boissonade, pp. 149 ff.; cf. Stark, *Gaza und die philistäische Küste*, 1852, pp. 600 ff.). After the mention of Uranus, *τλαθι* is quite in order. It is not the deified hero, as Mr. Charles thinks, but the god who is addressed in a manner of which many examples can be quoted. Uranus was probably identified in Beersheba with Baal Shamem (בעל שםם) and he with Dhu'l Sharra — Dusares. The term *ἀρηίφιλος* is no doubt, as Professor Fowler points out in a letter, the common Homeric epithet of warriors "dear to Ares"; but it may have been chosen in this connection because the planet Mars was the special astral manifestation of Dusares. On this, however, no stress should be laid. Antipater's masterpiece may have represented Uranus-Dusares, the heaven-god, driving a chariot of war and leading the warlike hosts. The name of the artist whose fame the poet desired to immortalize was sufficiently common in all parts of the Hellenistic world, and the grandfather, as well as father, of Herod had borne it in Idumaea. There does not seem to be anything in the inscription clearly indicating the nationality of the poet. It appears to me certain that there is one grammatical error (*ἔχων* for *ἔχοντα*). But it is not necessary to resort to the assumption that the poet's vernacular was the Aramaic, in which the participle would be the same whether Antipater or Uranus were in the writer's mind. Even a Greek may have sacrificed grammar to metre or to the dominating thought of the divine being which wrung from him the *τλαθι*.

As to the date, we should have a clew if we could be certain that the poet was familiar with Nonnus. According to Suidas (*s.v.*), Nonnus wrote his *Dionysiaca* ca. 410 A.D., and Proclus, who was born in 412 A.D., quotes his work. It is not unnatural to suppose that copies of the great epic spread to Ashkelon, Gaza, and the Greek cities of the Negeb. If a pagan author, living in Panopolis, Egypt, could write such a poem in the fifth century, there is no reason why a modest cultivator of the muses in Beersheba, still adhering to his ancestral worship, should not have borrowed from it a fine phrase. The peculiar

expression *ἀσπετος αἰών* also looks as if it were borrowed, but I have not found it in perusing the epic of Nonnus. The writer seems to be surprised that such a unique object of art should have been produced in Beersheba (*ἐνθάδε*). This surprise may have been feigned, a literary conceit, if he was a native of the place, or genuine, if he came as a visitor to the city. In either case, he may have been acquainted with the wonderful works in the Agora at Gaza. Unfortunately, we do not know how long they had been there when Chorikios wrote his description in the reign of Justinian. The Antipater inscription may be dated tentatively in the middle of the fifth century A.D. Even if there is no dependence upon Nonnus, it is not likely to be much earlier than the other inscriptions discovered by us in the Negeb.

Professor Fowler suggests the following translation :

“Eyes, what is the wonder which was here made as an ornament? What mortal invented the beauty which endless ages (had) not previously (invented)? Antipater made this and holding in his hands the reins of the armies dear to Ares he pointed (oh, be gracious!) to heaven.”

He adds, “I confess that this seems to make Antipater out to be at once a general and an artist, which is not a usual combination, and I do not like the rendering of the line *καὶ οὐρανὸν Ἰλαθι δεῖξεν*, but at any rate this does no serious violence to grammar;” and subsequently, “On the whole I think the interrogation mark after *θαῦμα* is probably right.” This involves rendering *πότι* also as interrogative, not indefinite.

My colleague, Professor J. R. S. Sterrett, offers a somewhat similar rendering, also based on the assumption that “there is no grammatical break in the inscription” :

“Eyes, what marvel can it be that ye see here? The universe hath been depicted. What mortal was it who fixed that order which since time began hath not been fixed before? Antipater, who holdeth in his hands the marshalling of warrior hosts—Antipater it was who fashioned it and portrayed in a group the vault of heaven.”

He further observes: “Like many works of poetasters of a late day, the lines contain an odd mixture of that which has long been obsolete (*Ιλαθι*) with what is of recent origin (*ηὐρα* and *ἔτυξε*)”; and “*Ιλαθι* is a locative from *Ιλη*.”

If such a locative from *τάν* actually was used in Greek speech, though I am not aware of its occurrence in extant Greek literature, it would admirably suit my conception of the poem. In my judgment, Antipater, the artist, had set forth, "in a group," Uranus, the heaven-god, holding the reins of a span of horses with the figures of soldiers by the side of them. This is perfectly intelligible, especially in the light of Chorikios' account of the masterpieces in Gaza. But I feel it to be safer to adhere to the reading *τλαθ* and the meaning "be gracious," which suits my interpretation just as well. I find it difficult to visualize a picture of the universe, or set before my mind's eye "the vault of heaven in a group"; and I frankly confess that I cannot quite understand this Antipater who is able to "portray the vault of heaven in a group" or "depict the universe," when he is commander of some troops in Beersheba, or find leisure for creations of this sort, though in charge of an army "dear to Ares."

One thing seems to me certain: Antipater is the artist whose work is celebrated, and not a general whose artistic performances entitle him to more honor than his victories on the battlefield, or a governor whose sycophantic rhymester immortalizes the wealth that paid for the masterpiece rather than the brain that conceived and the hand that executed it. If the grammatical accuracy must needs be saved, it may perhaps be permissible to put the reins in the hand of the artist. He created this ornament, this representation of the cosmic ruler and his army, made this thing of unprecedented beauty, portrayed the heaven-god, Uranus, directed with his genius the host of heaven as a charioteer his span, assigning to each figure its proper place, driving some forward, holding others back. This might be an allusion to the features of the work itself and, at the same time, be thought a graceful, though somewhat far-fetched, compliment to Antipater. But the man who could write *δη μὴ πάρος ἀσπετος αἰών* would, in my judgment, be capable, without a drop of Semitic blood in his veins, of writing also *ἔχων* for *ἔχοντα*, if the metre demanded it.]

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Archaeological
Institute of
America

GENERAL MEETING OF THE ARCHAEOLOGICAL
INSTITUTE OF AMERICA

DECEMBER 28-31, 1909

THE Archaeological Institute of America held its eleventh general meeting for the reading and discussion of papers at Johns Hopkins University, Baltimore, Tuesday, Wednesday, Thursday, and Friday, December 28, 29, 30, and 31, 1909, in conjunction with the annual meeting of the American Philological Association. Four sessions were held for the reading of papers. The abstracts which follow were, with few exceptions, furnished by the authors.

WEDNESDAY, DECEMBER 29. 9.30 A.M.

1. Professor William N. Bates, of the University of Pennsylvania, *Two Labors of Heracles on a Geometric Fibula*.

This paper will be published in full in a later number of the JOURNAL.

2. Professor Campbell Bonner, of the University of Michigan, *The Standard of Artaxerxes at Cunaxa*.

This paper offered a revision, on philological and archaeological grounds, of the interpretation commonly given to the well-known passage in the *Anabasis* (I, 10, 12), where Xenophon describes the standard of Artaxerxes:

καὶ τὸ βασιλείου σημεῖον ὄρᾶν ἔφασαν, αἰετόν τινα χρυσοῦν ἐπὶ πέλτη ἐπὶ ξύλου ἀνατεταμένον.

This description should be translated thus: "a kind of golden eagle on a light shield, raised aloft upon a pole." The writer held that there was no evidence, literary or monumental, independent of the statement of Xenophon, to prove that the royal standard of this period had the device of a golden eagle; whereas Xenophon's expres-

sion "a kind of eagle" betrays some uncertainty. In the Middle and Later Assyrian Empires, which strongly influenced Persian civilization, the royal standards displayed sacred emblems probably derived from the winged symbol of the god Ashur. The symbol of Ashur was modified by the Persians and adopted as the symbol of Ahuramazda, which appears on Persian sculptures closely associated with the person of the king. It was suggested that the "eagle" seen by Xenophon's informants was really some form of the symbol of Ahuramazda used as a royal ensign. Such a device, because of its form, could be easily mistaken for an eagle.

3. Mr. Thomas Jex Preston, Jr., of Princeton University, *The Bronze Gates of Canosa*.

No abstract of this paper has been received.

4. Mr. L. D. Caskey, of the Museum of Fine Arts, Boston, and Mr. B. H. Hill, of the American School of Classical Studies at Athens, *Structural Notes on the Erechtheum*. (Read by Mr. Caskey.)

This paper will be published in a later number of the JOURNAL.

5. Dr. Arthur Fairbanks, of the Museum of Fine Arts, Boston, *A New Marble in the Boston Museum of Fine Arts*. (Read by Mr. L. D. Caskey.)

The Museum of Fine Arts in Boston has recently placed on exhibition a three-sided marble relief corresponding closely to the 'Ludovisi Throne' in shape, size, and style of workmanship. The presence of the delicate scroll at the bottom indicates what is missing from the relief in Rome. On the front a winged figure holds a pair of scales (beam missing) with a small nude figure in each scale pan. On either side of this figure is a draped seated woman. On one end of the throne is a nude boy, seated and playing the lyre; on the other end (which is much narrower) is a realistic old woman, seated, holding in her hand some object which has for the most part been chiselled away. The relief will be published later.

6. Mr. Francis G. Fitzpatrick, of Harvard University, "Byzantine" Architecture in France.

The controversy over the propriety of applying the term *Byzantine* to the churches having domes on pendentives in the south of

France is not yet at an end. The argument for the Byzantine derivation of these buildings was first seriously advanced by Félix de Verneilh in 1851 in his *L'Architecture byzantine en France*. All the buildings which he included in this category made use of the dome on pendentives; and this, he pointed out, was the most striking single characteristic of Byzantine architecture. He believed that the style was introduced into France directly from Venice, and he furnished considerable evidence to substantiate this belief. The main argument is based on the great similarity of the domed churches of St. Front at Périgueux and St. Mark's, Venice. He maintained that St. Front, which he dated from 984, was erected in imitation of St. Mark's, which he dated from 977. After its completion St. Front, according to Verneilh, served as the type from which all the other domed churches of the south of France were derived.

Critics of Verneilh early called attention to the fact that most of these churches which he called Byzantine are at least as much Romanesque as they are Byzantine. The most radical of Verneilh's later critics maintain that the French domed churches are not Byzantine at all, but native French products without foreign elements of any kind. This view is based partly upon the difference in construction which the domes, pendentives, and supporting members of these buildings reveal as compared with Byzantine models, and partly upon recent research into the history of St. Mark's and St. Front, which has tended to retard the date of erection for both of these domed churches (*i.e.* St. Mark's, 1063; St. Front, after 1120). Writers like Brutails and Spiers practically claim for the French dome on pendentives the merit of a new invention. It differs in many constructive details from the Byzantine form; but it must be admitted that the idea is still the same—it is still a dome on pendentives, and the differences may be accounted for partly by the materials employed and partly by the habits of the masons and builders of this region in the construction of walls and vaults in stone.

The weakness in the argument for the purely French origin of these eleventh-century domes lies in its inherent improbability, when it is remembered that the dome on pendentives had been in existence in the East for at least eight centuries. Spiers's assumption that in disposing of Verneilh's theory of the derivation of Byzantine influence through St. Mark's he has thus destroyed the case for the Oriental origin of the French domes is unwarranted. It was certainly possible for Eastern influence to reach southern France by other channels, although these may now be obscure or lost to view.

Both sides to the discussion have thus far ignored the domed churches of Cyprus, such as St. Barnabas, near Salamis, and the five-domed church of cruciform plan at Peristerona, near Nicosia, buildings which, as Enlart has pointed out, are constructed in the French manner. These are apparently of great antiquity, although their dates cannot be given with precision. Enlart believes them to be considerably older than the French domed churches. If this be so, we may still regard the French buildings as Oriental in origin, and it is quite possible and perhaps probable that they reached southern France by way of the island of Cyprus.

7. Professor Albert T. Clay, of the University of Pennsylvania, *Babylonian Bookkeeping*.

More than eighteen thousand tablets and fragments belonging to the administrative department of the temple of Enlil were found during the excavations of the University of Pennsylvania at Nippur, conducted by Dr. J. P. Peters (1889-90) and Dr. J. H. Haynes (1893-96). The latter found some of the tablets in the very position in which they were left when the archive room was destroyed; some were reclining against each other like a shelf of leaning books in an ill-kept library of to-day. They were dated in the reigns of the foreign dynasty known as the Kassite, which ruled over Babylonia during the greater portion of the second millennium before Christ. While thousands of temple archives have been found elsewhere in Babylonia, of earlier as well as later periods, these tablets perhaps better than others enable us to reconstruct the ancient system of Babylonian bookkeeping.

The archives include records which deal with the administration of the temple, under which palace, city, and state affairs were conducted. They include receipts of taxes or rents from Nippur, neighboring towns, and outlying districts about the city. With this revenue commercial transactions were conducted whereby a profit was gained. These include records of loans of animals, grain, and other temple property, and a large number of inventories which show at stated times the existing state of affairs. A great many records refer to salary and other payments to the storehouse officials, as well as to a host of functionaries in connection with the temple, palace, and state affairs. On the whole, the documents show how the institution was maintained, and how carefully the administrative affairs were conducted, not unlike modern institutions of a similar character.

THURSDAY, DECEMBER 30. 9.30 A.M.

1. Mr. Martin L. Rouse, of Toronto, *Hercules and Samson*.

The writer argued that Hercules is to be identified with Samson and that knowledge of him reached the Greeks through the Tyrians.

2. Professor Howard Crosby Butler, of Princeton University, *The Roman Fortresses in the Provinces of Syria and Arabia*.

A map of Syria, including the ancient provinces of the two Syrias and part of Arabia and indicating the positions of all the fortresses hitherto discovered in these regions, shows a comparatively straight, though broken, chain of military structures along the eastern border of the explored country. The southern part of the chain, in the old province of Arabia, comprises seven fortresses quite evenly disposed in a line one hundred miles long. Three of these, Koṣr il-Hallabāt, Dér il-Kahf, and id-Diatheh, have been measured for publication in detail by the Princeton Expeditions to Syria; two more, Kaṣr il-Abiad and Sès, are represented by sketch plans in M. de Vogüé's work, *La Syrie Centrale*; the others have been briefly described by M. Dussaud and the other explorers. These larger fortresses are from 150 to 250 feet square with angle towers, square or round, and often with towers in the middle of their sides. One of them is dated early in the third century A.D., three others may be dated by inscriptions of the early part of the fourth century; but all were probably founded in the second century, soon after the formation of the province of Arabia. These forts seem to have been connected by a line of small stations and watch towers disposed at nearly equal intervals.

Between the southern part of the chain and the northern group of fortresses is a gap of 100 miles, lying in a region for the most part unexplored. No fortresses have as yet been reported from this region, and the break in the chain may be accounted for by assuming that, at this point, the chain was deflected eastward toward Palmyra and the Euphrates. But north of the break the chain is taken up again, and is carried, on a slight curve, from Selemiyeh, ancient Salaminias, to Zebed, or almost to the Euphrates. This section of the chain is about seventy miles long and comprises six forts, three of which, Kaṣr Ibn Wardān, Androna, and Stabl 'Antar, have been published in detailed drawings by the Princeton Expedition. These forts are substantially like the southern forts in size and in plan; but, out of the five that are dated, four belong to the latter half of the sixth century; while the easternmost is dated in the fourth century. These military stations have been frequently

referred to as frontier fortresses; but they cannot be said definitely to have been placed upon the *limes* until the regions still farther east shall have been explored. But, granting that they were on the frontier, we should find that the *limes* in Arabia remained stationary from the second to the seventh century; for there are inscriptions which prove that these forts were occupied during all that time, while the eastern *limes* of Northern Syria, if represented by these fortresses, was much further west in the latter half of the sixth century than it had been earlier, because no early forts west of the Euphrates are known.

Besides these so-called frontier fortresses there are two other sorts of military structures in Syria and Arabia: 1, the barracks of the large towns like Androna and Salaminias in the north, and Ad-medera and Umm idj-Djimāl in the south; and 2, the small road-fortresses which are found along the great highways of the Roman Empire. An example of this kind of fort is found in ancient Arabia at Kaṣr il-Baik, on Trajan's road, between Bostra and Philadelphia (Ammān), and another, from northern Syria, called il-Habbāt, was probably on or near the road between Chalcis and Epiphanea. Both are to be published by the Princeton Expedition.

We have then, in these fortresses, in addition to the material for the study of the military architecture of the Roman and early Byzantine empires, much material for establishing the lines of the ancient *limes* at different periods, and, in connection with the inscriptions of these fortresses, much material for historical study. Several of these fortresses have yielded imperial inscriptions mentioning the names of legates, *duces*, and other officials, and the presence of certain legions or cohorts. One of them, the fortress at Kosēr il-Hallabāt, gives us a long edict of the Emperor Anastasius which will soon be published. But years of exploration and months of study are required before this subject can be discussed with any degree of finality.

3. Professor David G. Lyon, of Harvard University, *The Harvard Excavations at Samaria*.

This paper will be published essentially as read in the *Harvard Theological Review*.

The chief object in exploring Samaria is the search for material of Hebrew origin. The first campaign, 1908, began at the end of April, and continued, with two long interruptions, till near the end of August. While a small section of a broad Hebrew enclosing wall was found just before the work closed for the season, the more

imposing discoveries were from the Roman period. They included a mutilated marble statue, perhaps of a Roman emperor, a stone altar about 13 feet long and half as wide, a great stairway rising from the altar toward the south, about 80 feet broad and containing seventeen steps. On the stairway near its foot was lying a *stele* with a Latin inscription apparently of the second century of our era. To the west of the stairway was a great chamber, partly of masonry and partly cut in the rock, once covered with an arched roof, of which only one course of stones still remains in position. South of the stairway and only a few inches below the surface was a platform paved with stone blocks and surrounded by very massive foundations at a lower level. South of the platform were massive walls running south and others running east and west.

The campaign of 1909 began about the first of June and closed the middle of November, with Dr. G. A. Reisner in charge. The space south, southeast, and southwest of the platform has been explored. Three great buildings have been recognized, a temple erected by Herod the Great, a reconstruction of this building by the Romans, and on the rock below all the other masonry the outline of a Hebrew building, believed to be the palace of Omri and Ahab. The space occupied by the palace has not yet all been dug over.

On the lower terraces, south of the palace just mentioned, many other walls of Hebrew buildings were found. The Herodian gateway on the western side of the city was also explored. It is flanked on north and south by two large circular towers, one of which was dug out. This tower seems to be of Greek origin, restored by the Romans, and rests apparently on the site originally occupied by a Hebrew tower. An important building on the eastern side of the hill near the village was also explored to the level of the Roman floor. Several of the monolithic columns of this building were in position, most of the shaft projecting above the soil. Below the Roman level are very massive walls which seem to be of Hebrew origin.

Of smaller objects found were masses of Greek and Roman pottery, mainly fragmentary, inscribed Rhodian jar handles, fragmentary Greek, Roman, and Hebrew inscriptions, coins, chiefly Roman, and part of a cuneiform inscription.

It is expected that the work will begin anew in May, 1910.

4. Professor C. F. Ross, of Allegheny College, *Reconstruction of the Later Toga*.

The history of the toga is the history of a continuous development from the simple to the complex, from the scant Etruscan form to the

early Roman form, binding in the wearer's right arm, and eventually to the highly decorative toga of Augustus's time. When this limit of elaboration is reached, the custom is evolved of formalizing the two essential effects produced by the imperial toga, the girdle-like band across the chest and the full sweeping curve of the *sinus*. This formalizing appears first in lengthening the part of the toga falling down the back into a band so that it can pass around the body and produce these two effects, as in the so-called "aedile" statues in Rome. This band is then severed entirely from the toga and is fastened in front at the armpit or the chest. Busts showing these bands may be divided into four type forms. By the various ways in which this band passes about the body, whether under or over the right shoulder, and whether the end of the band passes over the left shoulder again or hangs over the left arm, the first three types are produced. The fourth type, with a separate band depending from the diagonal one, is produced by the attempt to show the *sinus* curve in the opposite direction. In this the end of the band is held loosely in the right hand. The bands seem to have had no special meaning. They merely produce a formal toga. Ridges and incisions on the bands in the marble in a few cases, however, may indicate that originally insignia of rank were painted or otherwise produced here.

5. Professor Harry L. Wilson, of Johns Hopkins University,
An Unpublished Epigraphical Manuscript from Spain.

The speaker described a manuscript collection of the ancient inscriptions of Cáceres and its vicinity, made by Claudio Constanzo between 1792 and 1800. This manuscript, which was recently purchased in a second-hand book shop in Madrid, contains 143 pages written in a most careful and beautiful hand, and is not the same as the manuscript of Constanzo which was known to the editor of the second volume of the *Corpus Inscriptionum Latinarum*. The total number of inscriptions in this collection is ninety-three, of which five are unpublished. Nineteen are found among the spurious inscriptions of Spain and forty-one were not known to have been copied by Constanzo. In spite of the author's stupidity and ignorance, the collection will add something to our knowledge of the inscriptions of Cáceres and the neighboring region. Fuller publication of the manuscript will be made at a later time.

6. Professor F. B. Tarbell, of the University of Chicago,
Architecture on Attic Vases.

The representations of buildings on Attic vases teach us nothing regarding Greek architecture. The discrepancies between these representations and the contemporary buildings known from existing remains are probably due to bad drawing.

7. Dr. R. V. D. Magoffin, of Johns Hopkins University,
The Alban Villa of Domitian.

This paper presented briefly the results of the work done during the summer of 1909 in the Barberini gardens and on the property of the Riformati monastery, on the Roman remains which are commonly called the Villa of Domitian. The investigation showed that the villa was not so large as has been supposed, that it is a four-terraced villa, some 600 m. in length, extending from the top of the ridge along the Alban Lake down toward the Appian Way. The villa seems to be an enlargement from an earlier two-terraced villa, which may be the republican villa of Clodius or of Pompey the Great. The villa did not connect with the other great imperial buildings which were built where the town of Albano now stands, as has been said, nor were there terraces down the slope toward the Alban Lake, although there seems to be a small square terrace on the top of the ridge overlooking the lake, which was connected with the villa proper, probably by an arched passage over the ridge road, which is certainly an ancient road. Further suggestions are made concerning the complexes of buildings and the purpose of several corridors and arches. The paper will not be published until a plan and perhaps a restoration can be offered with it.

8. Professor Walter Dennison, of the University of Michigan,
A Byzantine Treasure from Egypt in the Possession of Charles L. Freer.

Early in the year 1909 a collection of thirteen pieces belonging to an exceptionally rich Byzantine treasure came into the hands of a well-known antiquary of Cairo. Later, nine of these pieces were purchased by Mr. Charles L. Freer of Detroit, namely, two armlets, two earrings, one large and three small medallions, all of gold, and a small statuette of rock-crystal. The other four pieces, which are in Europe, are two bracelets, a necklace, and one large medallion. According to the account of the Arab who sold the treasure to the antiquary, all the objects were found at a small village called Tomet near Assiût in Upper Egypt. Of the large medallions one, set in a gold frame and now in the possession of Mr. Freer, is a medallion of Theodosius, which bears on the obverse a bust of the emperor facing

to the right with the legend, DNTHEODO SIVSPFAVG and on the reverse Theodosius holding the *labarum* with his left hand, and with his right raising a kneeling female figure wearing the turreted crown; the legend is RESTITVTORREI PVBЛИCAE. The diameter of the whole is about 10 $\frac{1}{4}$ cm., of the imperial medallion about 4 $\frac{1}{4}$ cm. The other medallion, likewise set in a beautiful frame, bears no inscription which would determine its date; it has on the obverse the scene of the annunciation and on the reverse a representation of the miracle at the marriage in Cana, with the legend, +ΠΡΩΤΑCYMI WN+ ("First of the signs").

The small medallions are about 4 cm. in diameter and consist of gold coins enclosed in gold frames. Two of the coins are of Justinian, the third of Justinus. An interesting feature of each of these small medallions is an inscription in Greek that runs around the frame near the outer edge. On one this inscription repeats the first half of Psalms 91, 11; on another it completes the verse. Thus, on the first we read, +OTITOICAGGEXOICAYTOYΕΝΤΕΛΕΙΤΑΙ ΠΕΡΙCOY (ὅτι τοῦ ἀγγέλου αὐτοῦ ἐντελεῖται περὶ σοῦ·); on the other, +ΤΟΥΔΙΦΥΛΑΖΑΙCΕΕΝΤΑCAICTAICODΟICCOY (τοῦ διφυλάξα σε ἐν πάσαις ταῖς ὁδοῖς σου). On one side of each medallion two rings appear for a hinge or clasp, and three similar rings on the opposite side. The third small medallion bears the inscription, +ΕΜΜΑΝΟΥΗΛΟΜΕΘΕΡΜΕΝΟΥΜΟΝΟΘΕ ΜΕΘΗΜΩ, a quotation from Matth. 1, 23, Ἐμμανούηλ ὁ ἐστιν μεθερμηνούμενον μεθ ἡμῶν ὁ θεός. The quotation on the medallion is, therefore, abbreviated, and the order of expression in the last four words is reversed. Moreover, while the spacing at the beginning of the inscription is quite generous, toward the end the letters are somewhat cramped and smaller. From the medallion hang three pendant chains (10 cm. long) ending in pearls.

The clasp of the two fine armlets is concealed by a boss and two shell-shaped ornaments. The two earrings are 11 cm. long, and consist each of three long pendants of gold decorated with crystals, pearls, and emeralds. The necklace is made of eleven small plates of gold à jour skilfully hinged together and profusely ornamented with pearls and precious stones. Twenty-nine pearls are still in place. There are settings for sixty-one precious stones, but several have fallen out. Hanging from the lower edge of the necklace were seventeen pendants terminating in large sapphires surmounted with pearls. Four of the sapphires are now missing.

The rock-crystal statuette is about 9 $\frac{1}{2}$ cm. high including the base (1 $\frac{1}{4}$ cm.) of gilded silver in which the statuette is fastened. The

head and the shoulders, which are slightly stooping, are turned a little to the right. The right hand holds a round object, possibly a bowl, the left arm hangs straight down by the body; the feet are planted closely together. The pose is rather stiff. The figure seems to represent a woman, and since the features are strongly individualized, this is perhaps a portrait. The tunic is girt high, while the outer garment falls below the right arm and over the left forearm. A curious boring (about $\frac{1}{4}$ cm. in diameter) was made nearly through the crystal from the front low down between the feet.

9. Dr. D. Brainerd Spooner, Superintendent, Archaeological Survey, Northwest Frontier, India, *Discovery of the Lost Stūpa of Kanishka and Relics of Gautama Buddha.* (Read by Professor H. R. Fairclough, of Leland Stanford University.)

The paper, illustrated by twenty-three lantern slides, gave an account of the official examination of two large mounds lying in the fields east of Peshawar and known locally as Shah-ji-ki-Dheri. Here, some years ago, M. Fouche had suggested that one should look for the site of the great monument — pagoda and monastery — which the Chinese Pilgrims tell us was erected by King Kanishka the Kushana near his capital city of Purushapura. The pagoda is described as at once the loftiest and the most magnificent in ancient India, having been built to enshrine relics of Gautama Buddha. The monastery is said to have been the seat of some of the most learned doctors of the early church, where many of the sacred books had been composed. Yüan Chwang visited the monastery in the seventh century, but no reference to it is found later than the sixteenth century.

The excavations were begun in the winter of 1907-08. The results of the first season's work were disappointing, but those of the second unusually rich, the ground plan of the whole stūpa being finally revealed. The central portion of the platform is a square, with massive round towers at each corner and an extensive projection running out on all four sides. No similar plan is known in any other monument of the period, and the total diameter of 286 feet greatly exceeds that of any other stūpa of that age.

Assuming that, as usual, the relic-chamber would be in the exact centre, the diagonal was drawn and a huge pit outlined midway between the corners and then slowly taken down. The work was most arduous, owing to the solid nature of the material passed through, really the inner core of the dome, or rather the débris of the same. But at last, after passing what had seemed at first to be

virgin soil beneath the monument, the relic-chamber was found. The copper casket was still upright and in its original position. It was not, however, quite intact, as two of the three figures originally supported by the lid, the two Bodhisattvas, had been broken off, together with the halo of the seated Buddha figure. But these pieces were all recovered in close proximity to the casket. The bottom of the casket was loose, though still in position, and lying on it was disclosed the inner reliquary, with its original sealing beside it, bearing the device of an elephant. The reliquary itself is of clear rock-crystal, measuring $2\frac{1}{2}$ by $1\frac{1}{2}$ inches. It is six-sided and slightly barrel-shaped, with one end hollowed out for about one-half the length of the whole. It was within this cavity that the relics were found, in whose honor the whole mighty monument had been erected. They consist only of three tiny fragments of charred bone, the largest not much bigger than a small marble. It is safe to assume that Kanishka must have believed these relics authentic, or he would not have erected in their honor the mightiest and most magnificent of the monuments of his time.

From the base to the edge of the slightly curved lid the casket measures 4 inches, with a total height of $7\frac{1}{4}$ inches to the top of the seated Buddha figure, while in form it is cylindrical with a diameter of 5 inches. The lid itself is decorated with lotus petals faintly traced, so that the whole represents a full-blown flower, on which the two standing Bodhisattvas and the seated Buddha figure rest, although the latter is really seated on a smaller lotus flower which rises on a slight stem from the centre of the former. Below the edge of this lid, along the lip which fitted over the top of the casket, is a very graceful frieze of flying geese in low relief, carrying garlands in their beaks, while the main body of the casket is decorated with a more elaborate frieze of seated Buddha figures upheld, as it were, by a long, undulating garland borne by little Erotes in a variety of animated attitudes. The centre of this frieze is occupied by a large standing figure of the king himself with two attendants. The design is admirable, but the execution is hardly equal to it. It is certainly not a product of the *Blütezeit* of Gandhāra art, and is therefore of added interest and value, as it tends to disprove the theory that this school reached its highest glory under the Great Kushana.

But the figured devices on the casket are of no greater interest than the inscriptions. These are very faintly traced in the dotted or punctured form of cursive Kharoshthi, which is one of the most puzzling scripts of ancient India, and the only one read from right

to left. The most interesting of the three inscriptions hitherto deciphered is the one in the spaces below this frieze. This I read as *Dasa Agisala Navakarmi Kanashkasa Vihare Mahasenasa Sangharame*, and would translate as the signature, so to speak, of "the slave Agisalaos, the superintendent of works at Kanishka's Vihāra in the Sangharāma of Mahāsena." Unfortunately, nothing further is known of Agisalaos or of Mahāsena. The former was doubtless a Bactrian Greek in Kanishka's service, which gives us epigraphical evidence of the Greek influence in the Gandhāra School, so eloquently attested otherwise by the sculptures themselves.

The artistic remains thus far recovered are few and inferior, though by no means unimportant, and it would be strange indeed if further exploration were not to yield material of great value for the history both of art and of architecture in Gandhāra.

10. Dr. Oliver S. Tonks, of Princeton University, *Experiments with the Mycenaean Glaze*.

This paper will be published in full in a later number of the JOURNAL.

THURSDAY, DECEMBER 30. 2 P.M.

Joint Session of the Institute and the Philological Association.

The following archaeological papers were presented :

1. Mr. W. B. Dinsmoor, of the American School of Classical Studies at Athens, and Mr. Henry D. Wood, of Philadelphia, *Structural Notes on the Propylaea*. (Read by Mr. Wood.)

This paper will be published in a later number of the JOURNAL.

2. Dr. William Hayes Ward, of New York, *The Representation of Babylonian Gods in Art*.

This paper showed on the screen the succession of deities as worshipped in Babylonia, Assyria, and in the Hittite kingdom and in Persia from about 4000 B.C. to about 600 B.C. Nothing is earlier than the representation of one beardless deity, or two facing each other, drinking through a tube from an amphora. Then we have several forms of the Babylonian sun-god. One early type shows him with rays, fighting an enemy and pushing him against a mountain. He represents the sun's heat as it drives away the clouds on the eastern mountains, and corresponds to the later Nergal, god of

virgin soil beneath the monument, the relic-chamber was found. The copper casket was still upright and in its original position. It was not, however, quite intact, as two of the three figures originally supported by the lid, the two Bodhisattvas, had been broken off, together with the halo of the seated Buddha figure. But these pieces were all recovered in close proximity to the casket. The bottom of the casket was loose, though still in position, and lying on it was disclosed the inner reliquary, with its original sealing beside it, bearing the device of an elephant. The reliquary itself is of clear rock-crystal, measuring $2\frac{1}{2}$ by $1\frac{1}{2}$ inches. It is six-sided and slightly barrel-shaped, with one end hollowed out for about one-half the length of the whole. It was within this cavity that the relics were found, in whose honor the whole mighty monument had been erected. They consist only of three tiny fragments of charred bone, the largest not much bigger than a small marble. It is safe to assume that Kanishka must have believed these relics authentic, or he would not have erected in their honor the mightiest and most magnificent of the monuments of his time.

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the summer heat and pestilence. Another early form is of the sun-god coming out of the gates of the morning and stepping on a mountain. He may have rays or streams about him, and carries a notched sword, apparently armed with flint flakes. Another early form of the sun-god Shamash represents him seated, with either rays from his body or streams, as he was regarded as the giver both of light and water. When three large dots are behind this god he represents the moon-god Sin, or Thirty.

A very early representation is that of a god in a four-wheeled chariot, with a whip, driving a harnessed "dragon," between whose wings stands a naked goddess with a thunderbolt. These may represent Bel and Belit; but the fight between Bel and the Dragon is rare in Babylonian art, although very frequent in the later Assyrian art, where for the conventional dragon may be substituted any composite or naturalistic creature, until in the Persian art it becomes almost the only representation of a deity fighting one or two lions.

Of the goddesses the earliest seems to be Bau, afterwards identified with Gula. She is seated, with hair either falling in a long tress or looped behind, and has no weapon or emblem, except that at times she is attended by the goose. Sometimes she seems to be the goddess of fertility, and stalks of grain rise from her body. When a similar seated goddess carries a naked child, it probably represents the thought that the worshipper was nursed by the goddess, as this is occasionally claimed by kings, and we have no Babylonian mother and child such as the Egyptian Isis and Horus. The other frequent goddess is Ishtar, either seated, in the older art, and with alternate clubs and scimitars rising from her shoulders, or standing, accompanied by a lion, in front view, with quivers of arrows from each shoulder, and lifting the double serpent caduceus.

Very frequent in the very early art and that which immediately follows it is Gilgamesh, with his associate Eabani, fighting a lion, a bison, a buffalo, or a stag or oryx. The artists delighted to discover various ways of exhibiting his prowess.

In the middle Babylonian period, from 2500 to 1000 B.C., there emerge several new forms of deities which were derived from the West, where the Syro-Hittite civilization prevailed. In that region we know three preëminent Hittite gods, one a dignified superior god, well clothed and usually with no weapon, who perhaps was Tarkhu, the biblical Terah, father of Abraham. With him was a nude goddess, later represented as partly clothed and with a dove, corresponding to Aphrodite. She was probably the wife of Tarkhu. The third was the Hittite Teshub, and was probably their son. He is repre-

sented as wearing a very short garment, a peaked helmet, and loaded with weapons. He leads a bull and stands on mountains. He is the god of lightning, represented by his weapons, and thunder, represented by the bellowing bull, and of mountains and war. He was introduced to the Babylonians under the Syrian name of Adad (Hadad, Addu) and with the same attributes, except that he carried a thunderbolt, not known to Hittite art. The early worship of Yahve by the Hebrews was probably related to this god. The superior Hittite god Tarkhu was differentiated into two Babylonian gods, of whom one was Marduk and the other Martu, both of whom in art much resemble him. Marduk is known by his scimitar held downward by his side, while Martu simply lifts a short sceptre to his breast. The naked Hittite goddess appears in Babylonian art as the nude Zirbanit, wife of Marduk.

The Assyrian deities varied somewhat in their representation from the Babylonian. We find Ea, god of the waters, sometimes following a Babylonian convention, which represents the god as holding a vase from which streams of water gush and fall to the ground, perhaps to be taken up by other vases, while beside him are the goat-fish and the man-fish; at other times the god is seated over a goat-fish. Adad is represented over a bull, and Ishtar over a lion, and each enveloped in rays ending with stars. Extremely frequent is the representation of what is called the sacred tree, but which is rather the tree of life. The accompanying divine figure, with a cone and a pail, is not to be considered, as usually supposed, to be fertilizing the pistillate flowers of the palm with the staminate flowers, but as plucking off the fruit, representing long life and other blessings, to present to the worshipper. In some cases the breaking off of the fruit is clearly represented.

3. Dr. Edgar L. Hewett, of the School of American Archaeology, *The Excavations of the School of American Archaeology in 1909.*

The paper was intended to give a picture of the life of one of the ancient races of America, formerly occupying the southwestern part of the United States, as disclosed by the excavation of a number of their buried towns. Views were shown of the cliff towns of Kit Sil (Keet Seel) and Betatakin, discovered by the expedition during the past summer and now for the first time made known to the scientific world. These were cliff towns, consisting of stone buildings, several stories high, and found in such a good state of preservation that the floors, ceilings, and roofs were still in place and perfectly preserved.

Next were shown the ruins on Pajarito plateau, near Santa Fé, New Mexico, where excavations have been in progress for three seasons past. These buildings were once from one to four stories high, built against the vertical walls of the cliffs, back of which were chambers excavated in the rocks, which were used for living rooms and in some cases for the burial of the dead. Other villages of similar character were built on higher ledges. On the tops of the mesas were the ruins of enormous community houses, which were shown in the process of excavation. One of these, known as the Puye, consisted of four great buildings, forming a quadrangle about 300 feet square. The excavation of the "South House" of the quadrangle disclosed a ground plan of 200 rooms. It was predicted that the excavations of the four sides would reveal about 800 rooms on the first floor, and as the building was of three or four stories, the original number of rooms was estimated to have been about 1500. Other ruins in El Rito de los Frijoles near Santa Fé were shown in the process of excavation. Of especial interest were the subterranean sanctuaries, several pictures of which were shown. These had been the places of council and of religious ceremonies, the place where the priests retired for silent thought and the head men gathered to seek wisdom from Mother Earth, from which all men came, the symbol of this being the pit near the altar, known as the *sipapu*.

The methods of disposing of the dead in crypts and cemeteries was also shown, and it had been found that the bodies had been invariably folded at burial in the "embryonic position," being the same in which the child is born. The bodies were wrapped in cotton cloth and burial robes of beaver and otter fur. It was shown that this mode of burial had prevailed in ancient times widely over the American continent as well as in Egypt and parts of Asia. The relationship of the ancient cliff peoples to the modern tribes was established on anatomical, traditionary, and cultural proof.

Evidences of the great age of these ruins were shown in the trails deeply worn in the rocks. From six to ten centuries was assigned as the time that had elapsed since the abandonment of these ancient cities, the cause of extinction being the drying up of the springs and streams. Evidences of this were found in the physiographic condition of the country, the legends of the Pueblo Indians, and the symbolism of the decorations on the pottery found in the ruins, which usually depict some emblem of the god, Awanyu, preserver of the waters.

It was shown how, in the excavations now going on, every effort

was being made to preserve the ruins from deterioration, to restore certain details so as to make them known and accessible to the travelling public. Views of the interior of rooms were shown with the articles of domestic use restored to their original places. The paper closed with a view designed to give a correct picture of the ancient town of Puye, the terraced houses clinging to the cliff walls, the ladders, stairways, and trails in place, and the whole crowned by the great community house on the mesa top, all as it probably existed a thousand years ago.

FRIDAY, DECEMBER 31. 9.30 A.M.

1. Dr. Harold R. Hastings, of the University of Wisconsin, *Identification of the Persons represented upon the Attic Grave Reliefs.*

This paper will be published in a later number of the JOURNAL.

2. Professor William H. Goodyear, of the Brooklyn Institute of Arts and Sciences, *Recently Published Measurements relative to the Leaning Tower of Pisa and the Pisa Cathedral.*

This paper will be published in a later number of the JOURNAL.

3. Professor James R. Wheeler, of Columbia University, *Notes on a Scyphus in Boston.*

The subject of discussion was the identity in the design on the front of a Corinthian scyphus in the Museum of Fine Arts with that on a scyphus from Samos, published by Boehlau, *Aus ion. u. ital. Nekropolen*, Pl. IV, 1. The two vases are also practically of the same size and technique, and differ only in the design on the back, which on the Boston vase would be considered Corinthian (the common type of Corinthian panther), on the Samian vase Ionic (lions of Ionic type). Thus the vases appear to be modelled on the same pattern. The vase from Samos seems to be quite as Ionic as it is Corinthian, and it may be questioned whether the Boston vase, the provenience of which is uncertain, is rightly put in the latter class. The so-called Corinthian panthers are not exclusively Corinthian, and on a Chalcidian vase (Furtwängler u. Reichhold, *Gr. Vasenmalerei*, Pl. 31) they may be seen in juxtaposition with lions of Ionic type.

4. Professor Lewis B. Paton, of Hartford Theological Seminary, *Some Phoenician Sarcophagi*.

No abstract of this paper has been received.

5. Professor Charles Knapp, of Barnard College, *The Side Entrances to the Stage of the Roman Theatre*.

The author pointed out that the discussions of this subject both in the manuals and in the various editions of Plautus and Terence have been curiously inadequate. Some writers leave the matter untouched, some confound the Greek and the Roman practice; others content themselves with a categorical statement unaccompanied by evidence, even that of Plautus and Terence; if passages in Plautus and Terence or Vitruvius are referred to, they are not adequately discussed.

The author then pointed out that Vitruvius V, 6, 8 clearly shows that the side entrances to the stage in the Roman theatre had, sometimes at least, each its own significance; Vitruvius does not, however, tell us which entrance led *a foro*, which led *a peregre*. For light on that problem we must go elsewhere, to Plautus, *Amphitruo*, 333, *Menaechmi*, 551-558, and to Terence, *Andria*, 720 ff., especially 732 ff. These passages were considered carefully, in great detail, and the conclusion was reached that for these three plays, at least, the side entrance to the stage lying to the *left* of the spectators led *a peregre*, that to the *right* of the spectators led *a foro*. It was then pointed out that in other plays the matter is not so simple. Thus in the *Rudens* the side entrance to the right of the spectators led from a lonely stretch of the shore to the left (west) of Cyrene, the side entrance to the left of the spectators led from Cyrene itself or at least from the harbor of Cyrene. It was noted, further, that in the *Heautontimorumenos*, which is laid in the suburbs of Athens, the characters always enter from a house except in two scenes; there the characters enter from the direction of Athens, but their own words or something in the play itself makes the direction from which they come perfectly clear. It was suggested further that sometimes at least actors going *rus* or coming *rure* used the *angiportum*; the *angiportum* could also be used as a roundabout way of reaching the forum from the stage.

The results reached for the *Amphitruo*, the *Menaechmi*, and the *Andria* are, so far as they relate to motion from the harbor or from the forum, identical with the views to be found in the books. There is this difference, however: others seem to have taken a traditional view without examination, and to have assumed that the rule applied

to all plays. The author has examined or will examine all available evidence and has shown clearly that no single conventional rule can be applied to all plays. He has shown further that for the statements ordinarily made about movement to and from the country (*rus*) there is no evidence in Vitruvius, none in Terence, and little in Plautus and that little uncertain.

Finally the author examined with care a paper by Albert Müller in *Philologus*, LIX (1900), entitled "Scenisches zu Römischen Komödien" (I. Rechts und links, pp. 9-15) and showed clearly that Müller is entirely wrong. So, too, he pointed out, were Dörpfeld-Reich, *Das griechische Theater*, p. 256, whose views Müller rightly rejects, though he seeks fruitlessly to improve upon them.

6. Mr. Thomas Spencer Jerome, of Capri, Italy, *A Note on the Esoteric Doctrines of the Eleusinian Mysteries*. (Read by Professor Martin L. D'Ooge, of the University of Michigan.)

The esoteric and fundamental doctrines of the Eleusinian mysteries must in some way have been woven into the countless speculative theories regarding the nature of life and man's relation to the universe propounded by generations of Greek philosophers. Maury and Creuzer at any rate hold this opinion. The philosophers would naturally avoid making any direct allusion to the teachings of these Mysteries, while appropriating them and working them over into their own systems. The Demeter-Persephone myth is, doubtless, the corn myth. Where can we find philosophic doctrines which conform to and fit into the ideas suggested by this myth? Certainly not in the teachings of Epicurus, nor of the Stoics, nor of Pyrrho and the other Sceptics. But we do find in the doctrine of Metempsychosis, associated with the name of Pythagoras and later developed by Plato, a decided kinship with the underlying idea of the corn myth. Plutarch (*de Is. et Os.* I), Diodorus (I, 96), and Synesius (*Enc. Calv.* 7) appear to indicate that the doctrine of Metempsychosis was the gist of the teaching of the Mysteries. Pythagoras was an ardent believer in the Demeter cult, his house at Metapontum being called the Temple of Demeter; and Proclus (*Comm. Plato's Pol.* I) says that Plato derived many of his dogmas from the Mysteries, referring especially to the fate of pure and impure souls. Mr. Jerome suggests that the esoteric doctrines of the Eleusinian Mysteries taught the neophyte the belief that his soul is in a course of development, and that after his body has been laid in the ground

his soul springs again into a new life, and that the kind of soul one sows at death determines the harvest one reaps in the next stage of existence, and so on in rhythmic cycles of death and rebirth; until at last the soul, when purified, becomes absorbed in the divine, which is God.

7. Dr. Kendall K. Smith, of Harvard University, *Unpublished Inscriptions from Corinth*.

This paper will be published in a later number of the JOURNAL.

8. Mr. Clarence Ward, of Rutgers College, *Some Problems in Mediaeval Vaulting*.

The vault problems considered in this paper were those which confronted the mediaeval builder when he was required to vault the apse and ambulatory of his churches, these being more complex in plan than the nave, aisles, or transept.

For the apse, the Romanesque builders employed the simple half-dome of semicircular or pointed section, whose masonry lay in horizontal courses resting directly upon the apse walls. Salient, pilaster-like strips resembling ribs but strengthening rather than supporting the vault occur in some places (e.g. Avignon, N. D. des Doms; Boscheriville, S. Georges). So long as the half-dome rested directly upon an outer wall in which windows could be cut, it was a practical and easily constructed vault. With the introduction of the ambulatory, the lighting problem became a difficult one; and with the retention of the half-dome, two methods only were possible, and neither solved the problem. The first was to admit the light under the ambulatory arches, placing the vault directly upon these (e.g. Cunault, Abbey Church). The second was to build a wall pierced with windows above the arches and under the half-dome (e.g. S. Savin, Church). The first method gave insufficient light, the second rendered difficult the support of the vault. The problem was eventually solved by the invention of the Gothic *chevet* which came with the introduction of rib construction. A series of radiating and wall ribs now supported the apse vault, but were independent of its panels, whose masonry now ran in courses at right angles to the outer walls, resting upon the ribs and forming a series of cells into which rose the heads of tall windows. Three great advantages were gained, lighter and more easily constructed vaults, concentrated pressures, easily met, and falling as low as the uniform

pressure of the half-dome, and spaces for large windows which could rise even to the vault-crown, thus supplying ample light. The position of the keystone varied in these vaults, making them differ somewhat in construction and appearance. A later development of the *chevet* consisted largely in an increase in the number of ribs employed, these often being added with little or no reference to the actual support of the vault but rather as decorative features (e.g. Antwerp, S. Jacques, where the apse has a central pier; L'Epine, near Châlons-sur-Marne; Freiburg, Cathedral).

The simple annular vault, although used by the Romans, did not become a popular form of Romanesque ambulatory vaulting, though found in a few churches and crypts. Intersected by expanding tunnel vaults, it did, however, aid in the development of the groined ambulatory vault which was the type most generally employed, either with or without transverse arches, the former being the most advanced form prior to the introduction of ribs. Even the introduction of ribs in most cases changed the structure rather than the form of the vault, the fully developed ribbed vault of trapezoidal plan simply replacing the similar groined vault. Attempts were made to improve upon this vault and to build one more adapted to the ambulatory plan. One method was to divide the ambulatory into alternating squares and triangles and vaulting each of these (e.g. Le Mans, Cathedral, outer ambulatory). Another was to place two triangles between squares, while a third consisted in dividing the entire ambulatory into triangles, each vaulted with or without interior ribs. In still other cases, the simple trapezoidal vault is modified by the addition of one or more ribs in the large and awkward outer cell, dividing it into smaller cells like those of a *chevet*. Similar vaults, but with the outer wall broken out so that a niche or veritable chapel is included under them, are also found.

All these methods show the skill with which the mediaeval builder vaulted spaces of unusual shape which his church plan presented. A still further example is to be seen in the church of the Jacobins at Toulouse, where there is a central row of columns and also an apsidal termination.

9. Mr. George W. Elderkin, of the American School of Classical Studies, Athens, *A Ceramic Note on Bacchylides*, XVI, 97. (Read in abstract by Professor Harold N. Fowler, of Western Reserve University.)

To be published.

10. Mr. George W. Elderkin, of the American School of Classical Studies, Athens, *Maeander or Labyrinth: a Comparative Study of the Red-figured Cylices.* (Read in abstract by Professor Harold N. Fowler, of Western Reserve University.)
To be published.

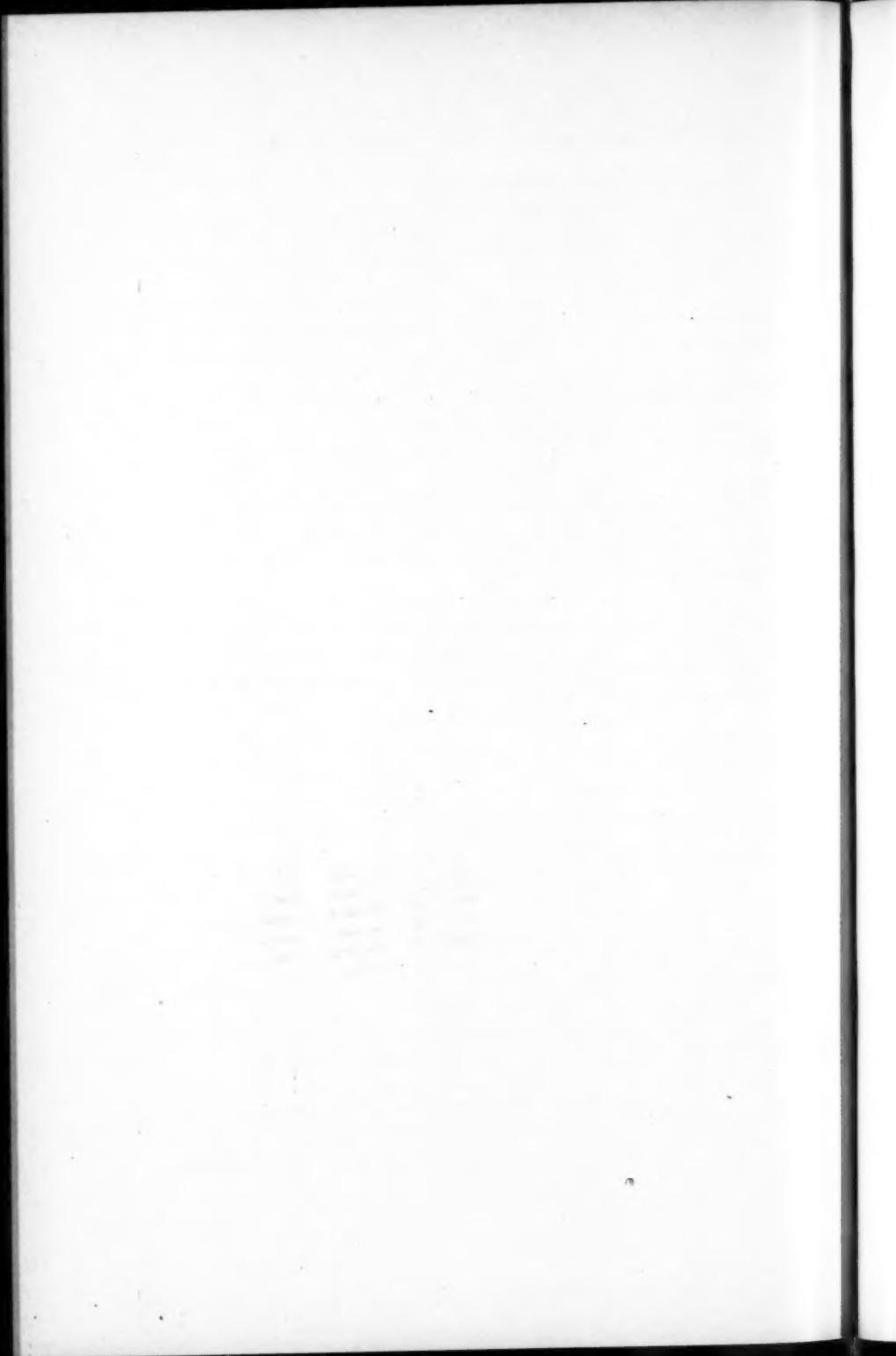
11. Professor Charles R. Morey, of Princeton University, *The Coinage of Bostra.*

The coin types of Bostra in Arabia are largely dominated by the Dusares cult. The representation of Dusares among the Nabatheans, the inhabitants of the district comprised in the province of Arabia, took the form of a baetylion standing on a base at Petra and Adraa, but an anthropomorphic type was used at Bostra. A bronze coin of Commodus in the Princeton collection presents the anthropomorphic Dusares type for the first time and shows that he was assimilated to Dionysus. This coin bears on the reverse the draped bust of a young god, with diadem and long flowing hair, and the inscription: DOVCAPHC BOCTPHNWN. The god standing in a temple on the reverse of a coin of Elagabalus is also Dusares, since he is costumed like Dionysus, and the animal at his feet, though the coin is badly worn, is proved to be a leopard by the appearance of this animal in a replica of the type on a coin of Bostra struck under Etruscilla. The camel on Bostra coins of Antoninus Pius and Commodus has a religious significance and is connected with the cult of Dusares, as is shown by the dedication of two golden camels to Dusares by a Nabathean merchant residing at Puteoli. The figure called "Silenus" by Mionnet and De Sauley, occurring on the reverse of Bostra coins, is the Marsyas type regularly used on city coins to signify the possession of colonial privileges. The appearance of the "colonus type" and a Latin inscription on a coin of Elagabalus show that Bostra became a Roman colony in his reign and not under Alexander Severus, as was hitherto supposed. Dussaud's objection to the "winepress type" is not to be considered. The Ammon type was introduced into Bostra coinage by the *III Legio Cyrenaica*, whose former quarters were at Cyrene, the centre of Ammon worship. Dussaud's theory that the anthropomorphic type of Dusares took the form of Ammon is disproved by the appearance of the real Dusares type on the Princeton coin. This Dusares type may be identical with that on the reverse of coins of Nabathean kings, hitherto explained as a royal head. The "Astarte" type is the usual city Tyche.

Other papers read by title were :

Professor George H. Chase, of Harvard University, *A Bronze Cista belonging to James Loeb, Esq.*; Professor Paul V. C. Baur, of Yale University, *Some New Centaurs*; Mr. John P. Harrington, of the School of American Archaeology, *The Language of the Tano Indians of New Mexico*; Mr. Sylvanus C. Morley, of the School of American Archaeology, *The Correlation of Maya and Christian Chronology* (to be published in the JOURNAL); Professor Mitchell Carroll, of George Washington University, *Carl Robert and the Purpose of Pausanias' Description of Greece*; Professor James H. Breasted, of the University of Chicago, *The Pyramids of Meroe*; Professor John C. Rolfe, of the University of Pennsylvania, *The Connection of Mirrors with Burial*; Professor A. L. Frothingham, of Princeton, *How not to date Roman Sarcophagi*; and *Contributions to the Study of the Roman Pomerium*.

The next general meeting is to be held at Brown University, Providence, Rhode Island, during the Christmas holidays of 1910. The American Philological Association will meet at the same time and place.



1909
July-December

ARCHAEOLOGICAL NEWS¹

NOTES ON RECENT EXCAVATIONS AND DISCOVERIES; OTHER NEWS

WILLIAM N. BATES, *Editor*

220, St. Mark's Square, Philadelphia, Pa.

GENERAL AND MISCELLANEOUS

AN INTERNATIONAL NUMISMATIC CONGRESS.—An international numismatic congress will be held in Brussels, June 26-29, 1910. Those who wish to present papers are requested to inform Vicomte B. de Jonghe, 60, Rue du Trône, or Alphonse de Witte, 55, Rue du Trône, Brussels, as soon as possible. Up to December 10 the titles of fifty-eight papers to be read were recorded. The complete programme of the congress is published in *Mb. Num. Ges. Wien*, VIII, 1909, pp. 59-62.

ARABIA.—HEREIBEH.—**A Lihyanite Sanctuary.**—In *C. R. Acad. Insc.* 1909, pp. 457-461 (fig.), Father LAGRANGE gives a brief account of two statues found by Jaussen and Savignac at Hereibeh, 1 km. north of el Ela in northern Arabia. They are about 2 metres high and probably represent kings. An inscription found a short distance away implies that a Lihyanite sanctuary was located at this spot. The hostility of the inhabitants prevented a careful examination of the site.

BUCHAREST.—A Palmyrene Funerary Inscription.—In *Eph. Sem. Ep.* III, pp. 29-32 (pl.), M. LIDZBARSKI publishes for the first time a Palmyrene inscription found at Constanza in Roumania, and now preserved in the museum at Bucharest. The monument dates from the first half of the third century A.D., and is very similar to an inscription from Palmyra which is exactly dated. The inscription was probably erected by a soldier in the Roman army which was stationed in Roumania. Several Palmyrene inscriptions have been found in the adjacent region of Dacia.

¹ The departments of Archaeological News and Discussions and of Bibliography of Archaeological Books are conducted by Professor BATES, Editor-in-charge, assisted by Professor C. N. BROWN, Miss MARY H. BUCKINGHAM, Mr. L. D. CASKEY, Miss EDITH H. HALL, Mr. HAROLD R. HASTINGS, Professor ELMER T. MERRILL, Professor FRANK G. MOORE, Professor CHARLES R. MOREY, Miss M. L. NICHOLS, Dr. JAMES M. PATON, Professor LEWIS B. PATON, Professor A. S. PEASE, Professor S. B. PLATNER, Dr. N. P. VLACHOS, and the Editors, especially Professor MARQUAND.

No attempt is made to include in this number of the JOURNAL material published after December 31, 1909.

For an explanation of the abbreviations, see pp. 140, 141.

NECROLOGY. — **Auguste Choisy.** — Auguste Choisy, who died suddenly, September 18, 1909, in his sixty-ninth year, rendered most distinguished service to the study of ancient architecture. His books on the art of building among the Egyptians, the Romans, and the Byzantines, his epigraphical studies in Greek architecture, and his great history of architecture are already classics, and their influence will be great and lasting. The Society of British Architects justly awarded him its great gold medal. (S. R., *R. Arch.* XIV, 1909, p. 277.)

Jules Delamarre. — December 17, 1909, occurred at Paris the death of the still youthful Jules Delamarre, the brilliant and diligent collector and editor of the inscriptions of Amorgos (*I.G. XII*, fasc. 7, Berlin, 1908). To him is due also the determination of the date of the sculptor Silanion. He had suffered for years from a lingering disease. (S. R., *R. Arch.* XIV, 1909, p. 463.)

Richard Engelmann. — The death of Richard Engelmann followed a stroke of apoplexy at the meeting of philologists at Graz. He was sixty-five years of age. He was the author of numerous articles in Roscher's *Lexikon der Mythologie*, the *Jb. Arch. I.*, and other periodicals, of *Archäologische Studien zu den Tragikern* (1890), a *Griechische Mythologie* (1895), and a small illustrated work on Pompeii. He published (1889, 1890) collections of illustrations to Homer and Ovid, and edited the new edition of Guhl and Koner's *Das Leben der Griechen und Römer*. He had recently finished a German translation of the *Guida del Museo di Napoli*, and was at work on an edition of the caricatures of Pierleone Ghezzi. (S. R., *R. Arch.* XIV, 1909, p. 277.)

Ludwig Friedländer. — The author of the *Sittengeschichte Roms* and of excellent annotated editions of Juvenal, Petronius, and Martial, Ludwig Friedländer, died at Strassburg in December, 1909, in his eighty-sixth year. In his special field, the antiquities and literature of imperial Rome, his learning was exceptional. (S. R., *R. Arch.* XIV, 1909, p. 463.)

François Anatole Gruyer. — The keeper of the Musée Condé at Chantilly, François Anatole Gruyer, died October 27, 1909, at the age of 48 years. He was keeper of paintings in the Louvre, from 1881 to 1889. His best works are *La peinture au château de Chantilly*; *les Quarante Fouquet*; *les portraits de Carmontelle*. His other works are still of value, though somewhat antiquated. He belonged to the pre-Morellian school of critics. (S. R., *R. Arch.* XIV, 1909, p. 462.)

Jean Paul Lambros. — Jean Paul Lambros, archaeologist and antiquary, died at Athens, May 20, 1909. He was born at Corfu in 1843 and studied at the University of Athens and in Florence. He devoted himself especially to Greek numismatics, publishing many articles in that field. In 1891, the first part of his *Αρχαία Ἑλληνικά νομίσματα*, dealing with the coins of the Peloponnesus, appeared. He was still engaged upon the continuation of this work at the time of his death. (*Le Musée*, VI, 1909, p. 159.)

Johanna Mestorf. — Fräulein Johanna Mestorf, until 1908 director of the Schleswig-Holstein Museum, died recently at Kiel, aged eighty-one years. She was known as authoress of numerous works on the antiquities of northern Europe and as translator of Undset's work into German. In 1890 she received from Wilhelm II the title of Professor, being the first woman in Germany to bear this title. (S. R., *R. Arch.* XIV, 1909, p. 278.)

William Alfred Packard. — William Alfred Packard, Professor of the

Latin language and literature at Princeton University, died December 2, 1909. He was born at Brunswick, Maine, in 1830, graduated at Bowdoin College and Andover Theological Seminary, and studied at the University of Göttingen. He revised the *History of Greece* by Curtius. (*Nation*, December 9, 1909, p. 578.)

Robert von Schneider.—By the death, October 24, of Robert von Schneider (1854-1909), keeper of the Museum of Antiquities at Vienna, professor of classical archaeology, and head of the Austrian Archaeological Institute, Austria loses another distinguished archaeologist. His published works—unfortunately not numerous—relate chiefly to the contents of the museum of Vienna. (S. R., *R. Arch.* XIV, 1909, p. 462; *Arch. Anz.*, 1909, p. 346.)

Gregory G. Tocilescu.—October 2, 1909, occurred the death of Gregory G. Tocilescu, Professor in the Faculty of Letters at Bucharest, aged 64 years. He was an indefatigable worker and published numerous monographs and articles on Roumanian archaeology. (O. TAFRALI, *R. Arch.* XIV, 1909, p. 460.)

Henri Weil.—The death is announced at Paris of Henri Weil, the classical scholar. He was born at Frankfort in 1818, was educated at Heidelberg, and in 1848 became a naturalized French citizen. He was a member of the Académie des Inscriptions, and held several academic appointments in the Université de France. Among his books may be mentioned *Études sur le drame antique*, *Études sur l'antiquité grecque*, *Études de littérature et de rythmique grecque*, and two editions of Aeschylus. (*Nation*, November 25, 1909.)

Franz Wickhoff.—Franz Wickhoff, the author of the *Wiener Genesis*, who gave new life and a new aspect to the study of Romanesque art and made valuable contributions to the history of the art of the Renaissance, was born in 1853 and died in 1907. (S. R., *R. Arch.* XIII, 1909, p. 417.)

SERVIA.—**Prehistoric Remains.**—In *Mitt. Anth. Ges.* XXXIX, 1909, pp. 163-177 (6 figs.), S. TROJANOVIĆ calls attention to a number of prehistoric monuments in Servia not previously known. Near the village of **Votnjak** there is a cromlech; at **Bojnik** a sacrificial stone 1.10 m. long, and 0.81 m. wide, cut with grooves; and near **Lozane** three stones with cup-marks. Of these, one has fifty-six holes, another fifty-seven, and the third twenty-six holes. Menhirs are rare in the whole Balkan peninsula; but 474 dolmens are known in Thrace, sixty-four of which have two chambers.

TAKHT-I-BAHI.—**Scenes from the Life of Buddha.**—The most important of Dr. Spooner's recent discoveries at Takht-i-Bahi in the Peshawar Valley, was a square stone pierced through the centre, which had evidently been the pediment of a stupa. The stone is a peculiar greenish one, and on the four sides are scenes from the life of Buddha. So far as Dr. Spooner is aware, a more perfect specimen of this cycle of the Mahaparanirvana does not exist. Among other finds near Peshawar is that of the headless figure of a goddess with four arms. This number of arms is unusual in Gandhara art. The upper pair of arms is lost, but the lower ones hold a spear and well-defined wheel respectively. The drapery of the figure is described as typically Greek. (*Athen.* October 2, 1909, p. 402.)

TURKEY.—**Acquisitions of the Imperial Ottoman Museum in Constantinople.**—Among the additions made to the Imperial Ottoman

Museum at Constantinople in 1908 are the following: A funeral-banquet relief of the first half of the fifth century B.C., from Thasos; four Lydian inscriptions; works of art from Miletus, among them the Apollo and Muses; terra-cottas from Amisus, including some large and very fine masks and busts, animals, figures and groups and fragments of hand-made polychrome rhytons in the form of ox, goat, and ram's heads, said by L. Curtius to be Gallic; Assyrian and Parthian reliefs and other remains; Hittite inscriptions and reliefs from Asia Minor and Syria. (G. KARO, *Arch. Anz.* 1909, cols. 84-86.)

EGYPT

THE EXCAVATIONS OF THE METROPOLITAN MUSEUM.—

In *B. Metr. Mus.* IV, 1909, pp. 119-123 (7 figs.), A. M. LYTHGOE reports upon the excavations carried on by the Metropolitan Museum of New York in 1909, at the pyramids of Lisht and in the Oasis of Kharga (see *A.J.A.* XI, p. 344; XII, pp. 84 and 354; XIII, pp. 71-72 and 104-105). The twelfth dynasty cemetery west of the pyramid of Amenemhat I was further explored and about fifty tombs containing pottery, ornaments, etc., typical of that dynasty found. The greater part of the time was given to the excavation of the causeway and temple of the pyramid of Sesostris I. The former was cleared for one hundred metres. It was of limestone, and consisted of a roofed passage 2.60 m. wide, the side walls painted a mottled red and black to imitate granite, and decorated above with colored reliefs representing fishing scenes, captives taken in foreign wars, etc. At intervals of ten metres on either side of the passage were niches in which there stood originally Osiride statues of the king. Trenches at different points show that this causeway extended to the level of the Nile Valley. At the temple proper the work began on the south side of the entrance-hall and was gradually carried westward to the rear of the temple, which proves to be of the same general plan as the pyramid temples of the Old Empire. A large amount of relief sculpture from the temple walls, of excellent modelling and with the colors remarkably well preserved, has been recovered. It is the most important material yet discovered for illustrating the sculpture in relief of the Middle Empire. At the Oasis of Kharga excavations were continued in the Christian necropolis and in the ancient city of Hibis. A number of the larger tomb chapels were cleared in the necropolis and several new streets with their houses at Hibis. Many small altars, plaster statuettes, stucco decorative figures, etc., were found, as well as a wall-painting with three deities on horseback. The skulls have been studied by A. HRDLICKA, who shows that those found in the tombs at Lisht belonged to Egyptians at the period of the highest physical development attained by the race. Only four broad, foreign skulls were found out of over two hundred. The graves at Kharga show Egyptians of small stature with considerable foreign admixture. *Ibid.* pp. 199-201 (6 figs.), H. E. W. describes the temple at Hibis which will be excavated during the present winter. The main structure was built in the reign of Darius I (521-486 B.C.) and is in a remarkably good state of preservation. The colors on the inside walls are in many places still intact.

GRAECO-ROMAN DISCOVERIES.—The Graeco-Roman finds in Egypt in 1908 were not large in proportion to the amount of work done.

The German Papyrus Expedition, returning to the Fayum, finished examining the necropolis at **Abusir-el-milâk**. The graves, largely destroyed, were of late Roman times and poorly furnished, yielding no papyrus. In one grave, within a lidless wooden coffin, was an inner coffin of linen cartonnage, gilded, in the form of a young woman, with face, hair, garments, and ornaments perfectly represented. In the ruins of **Philadelphia**, on the north edge of the district, the rectangular street plan, the brick house-walls ten or twelve feet high, and the inner construction of the cellar-like basements of the houses, were found preserved. Most of the movable property seems to have been carried away when the city was abandoned, but where this was not the case, papyrus manuscripts were found with the other objects of furniture. Some were kept in wooden chests. Those from the house of a veteran, Diogenes Turbon, are family documents from the time of Commodus to that of Alexander Severus. A large find of ostraca, of Ptolemaic date, consists of school exercises, receipts, etc. Most of the objects here are of the second and third, some of the fourth century A.D. There is nothing Coptic or Arabic, and only one Christian symbol, a red cross painted on a wall. At **Alexandria**, the Ptolemaic cemeteries at the east end of the city have yielded painted and sculptured grave-stones, gilded terra-cottas, weapons, pottery, especially black-glaze ware, etc. Another Christian *hypogeum* was found with thirty-four separate burial chambers. Two granite columns are conjectured to belong to the stadium which adjoined the Serapeum on the southwest. A Roman marble sarcophagus with bacchic scenes in relief is of some note. (F. ZUCKER, *Arch. Anz.* 1909, cols. 176-189; 4 figs.)

ABYDOS. — **The Excavations of 1909.** — In *Ann. Arch. Anth.* II, 1909, pp. 125-129 (3 pls.), J. GARSTANG makes a preliminary report of his discoveries at Abydos in the spring of 1909. The objects found belong to the second, sixth, eleventh, twelfth, and eighteenth dynasties and to the Ptolemaic period. Archaic seal impressions furnish new material for the chronology of the kings of the second and third dynasties. The opening of several hundred tombs of the fifth and sixth dynasties provides a series of well-established types of objects of that period. An undisturbed tomb of the sixth dynasty contained a coppersmith's crucible, melting-pot, dishes, knife-blades, chisels, etc. Worked vases of alabaster formed the principal discovery of the eleventh dynasty; while two bronze daggers were the most important objects from the twelfth dynasty. A large tomb of the eighteenth dynasty consisting of several vaulted chambers yielded some interesting gold jewelry, a rare figure vase of alabaster in which the handle is in the form of a child, and a terra-cotta vase in the shape of a kneeling girl with a child upon her back and a drinking-horn on her knee. The seal impressions of the second dynasty are discussed by P. E. NEWBERRY, *ibid.* p. 130 (4 pls.). The names which predominate are Kha-Sekhemin and Neter-Khet.

BEHEN. — **The Excavations of 1908-09.** — In its third campaign (1908-09), the Egyptian expedition of the University of Pennsylvania, directed by D. Randall-MacIver, carried on excavations at Behen, a short distance south of Wady Halfa. The town wall dating from the eighteenth dynasty was traced for its whole circuit of about a mile. There was a ditch seven feet wide, cut in places down to bed rock, with a low wall on each side, and, further back, the main wall. This was of brick twenty-four feet

thick with heavy buttresses and interior chambers. Many tombs of the twelfth and of the eighteenth dynasties were opened, the latter being of two kinds,—either well-tombs consisting of a shaft six to twenty feet deep connected with which were one to seven rooms; or gallery-tombs, in which a level approach or a descending stairway hewn in the rock led to a series of chambers. All of the tombs had been plundered in antiquity. Those of the twelfth dynasty were inside the town walls, and had for the most part remained covered since ancient times, so that the brick superstructures, which have disappeared elsewhere in Egypt, were frequently preserved. The most important finds were: (1) a well-preserved iron spear head of the twelfth dynasty, the oldest known example of worked iron in existence; (2) a remarkable collection of jewelry including three necklaces and two bracelets of plain gold beads, and a small cylindrical gold box containing a charm and fastened to the wrist by three strings, one of gold beads, one of gold and amethyst, and one of green feldspar, all dating from the twelfth dynasty; (3) also a long necklace of gold and amethyst beads, the ends formed by small couchant lions, another necklace of plain gold beads, and a third of gold beads in the shape of hawks and of Hathor heads; two bracelets of gold wire, and a gold ring set with a scarab of Amenemhat III, all from a tomb of the twelfth dynasty in which the roof had collapsed soon after the burial; (4) three necklaces, one of gold and amethyst beads, another of plain gold beads, and a third of gold beads shaped like cowrie-shells and lions, besides two gold ear-rings, of the eighteenth dynasty; (5) a considerable amount of pottery from the tombs of the eighteenth dynasty including a number of stirrup cups probably from Crete; (6) a bronze sword with ivory handle; (7) many objects of metal including bronze tools and one of iron probably used in cutting out the rock tombs; (8) two wooden mallets also used in this work; (9) a large number of scarabs including two with the names of unknown kings. All these objects are in the University Museum in Philadelphia. (D. R. M. and C. L. W. *The Eckley B. Coxe, Jr., Expedition to Nubia. Season of 1908-09.* Philadelphia, 1909, the University Museum. 4 pp.)

THE ETBAI DISTRICT.—**Some Unpublished Inscriptions.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 247-254 (5 pls.), F. W. GREEN publishes, with notes and a description of the route followed, some inscriptions copied by him in the region near El Kab in 1902.

MEROË.—**Greek Inscription of a King (?) of Axum.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 189-203 (4 pls.), A. H. SAYCE publishes an inscription in Greek letters of the fourth or fifth century A.D., found among the ruins of Meroë. The inscription furnishes evidence that the kings of Axum extended their power as far as the Nile. He also announces the finding of ruins which fix once for all the site of Meroë as identical with the mounds of Segēk, and presents some hitherto unpublished Meroitic hieroglyphic inscriptions.

BABYLONIA AND ASSYRIA

ASSUR.—**A Report on the Excavations.**—At the November (1908) meeting of the Berlin Archaeological Society, W. ANDRAE sketched the results of his five years' excavation and study on the site of ancient Assur. The palace remains, though older than those of Nineveh, are not so splendid

nor so well preserved; on the other hand, the Assyrian temples heretofore excavated were not rightly understood, their private houses had not been studied at all, and of fortifications, only late examples were known. In these three branches of architecture, as well as in all classes of smaller finds, entirely new and ample material is now provided at Assur. (*Arch. Anz.* 1909, cols. 35-36.)

SYRIA AND PALESTINE

GEZER. — **Supplementary Details of Excavations.** — In *Pal. Ex. Fund*, XLI, 1909, pp. 183-189 (pl. 3 figs.), R. A. S. MACALISTER presents the plan and detailed account of a house in Rujm 'Abd Allah of the Hellenistic period, mentioned in his previous report; the house is important as being, with one exception, the most complete residential building yet found. Macalister also describes an early olive-press recently discovered, and reports as the only new discovery of importance since the last statement, a small bronze weight, which may, from its inscription, prove of importance in discussing the problem of the jar-handles with "royal stamps."

HIERAPOLIS SYRIAE. — **Inscriptions and Other Antiquities.** — In *B.S.A.* XIV (session 1907-08), pp. 183-196 (3 figs.), D. G. HOGARTH publishes sixteen inscriptions (thirteen Greek, three Latin), and describes the site and the few antiquities of Hierapolis (now Mumbij) in Syria. One inscription is the thirteenth (possibly fourteenth) milestone toward Aleppo. The imperial honors date it in 197 A.D. It was found at the village of Arimeh. Many squared stones and mouldings lie about on the site of Hierapolis. A much-defaced recumbent lion, a headless draped statue of a man, and a stele with five busts in relief are the only sculptures mentioned. Several terra-cottas, representing the Dea Syriae, are published. The inscriptions are chiefly late epitaphs.

KHURBET SHEM'A. — **A Megalithic Structure.** — In *Pal. Ex. Fund*, XLI, 1909, pp. 195-200 (2 pls.; 2 figs.), R. A. S. MACALISTER describes the megalithic structure known as *Sarir Nebi Shem'a*, "The Throne (or Bedstead) of the Prophet Shammai," with the series of tomb-chambers underneath, near the ruins called Khurbet Shem'a, a village of the Roman period near Safed, the ruins of which are also described.

PALMYRA. — **An Altar and Tesseræ.** — In *Eph. Sem. Ep.* III, 1909, pp. 32-36 (pl.; fig.), M. LIDZBARSKI publishes a photograph of an altar bearing an inscription discovered by Lamer and Jackel in the fall of 1907, and three tesserae acquired by the same explorers at the same time.

ASIA MINOR

A JOURNEY THROUGH CILICIA. — At the March (1909) meeting of the Archaeological Society of Berlin, E. Herzfeld and S. Guyer presented some results of a journey through Cilicia in the spring of 1907. Herzfeld took *Olba* for his theme, with its interesting ruins, including a lofty tower, a theatre (built by Marcus Aurelius and Lucius Verus), a temple to Tyche, and especially the monumental Zeus temple, with thirty of its Corinthian columns still standing intact, the building of which Herzfeld ascribes to Seleucus Nicator (306-281 B.C.). Guyer spoke on the early Christian ruins of *Meriamlik*: (1) the basilica of St. Thecla (whose wor-

ship replaced the local cult of Athena), built by the Byzantine emperor Zeno (474-491 A.D.); only the apse of this stately structure has survived the frequent restorations and alterations of later periods. Below the basilica was found the sacred cave, where, according to the legend, St. Thecla dwelt during the last years of her life, until, pursued by her enemies, she vanished into the earth. This crypt consists of a number of chambers, dating from Zeno's reign, but to the south of it a basilica-like structure with Doric columns and terminating in an apse was found, which Guyer holds to be of much earlier date. He thinks it may have been the oldest Christian church of Seleucia, its very existence having given rise to the legend of St. Thecla's death. (2) A Byzantine church of the domed basilica type, the architectural details of which go to prove that this type of church dates from pre-Justinian times, as was maintained by Strzygowski (in his *Klein-Asien*). A fuller report of this interesting journey is promised in a special publication. (*Berl. Phil. W.* XXIX, 1909, Nos. 41 and 42.)

BALUKLAOU. — **A Dedication to Zeus.** — In the London *Times*, November 11, 1909, W. M. CALDER publishes the following Greek inscription found by himself and Sir W. M. Ramsay last summer at Baluklaou, one day's ride south from Lystra: *Toūs M[a]̄κρειν̄s ò | kaī 'Αβάσκαν̄s | kaī Bará̄s̄is B̄r̄t̄aō̄s̄ ò̄s̄ | 'Ēp̄ūm̄ | M̄ēḡȳs̄ | kaī ēīx̄j̄n̄ | ēp̄īs̄k̄ēn̄á̄s̄[v]̄ | t̄ēs̄ ñ̄w̄ōl̄ōḡȳj̄ ò̄s̄ | t̄w̄[v]̄ | īò̄s̄(̄n̄)āl̄ōm̄[á̄t̄w̄] ñ̄w̄ōt̄j̄s̄ ñ̄w̄ōs̄ | D̄ā | [H̄l̄āw̄].* He dates it in the first century A.D., and thinks it throws light upon the visit of Paul and Barnabas to Lystra because of the association of Zeus and Hermes.

EPHESUS. — **Recent Excavations.** — In the autumn of 1908, the Austrian expedition cleared the Odeum, a typical Roman theatre, with sunken orchestra and low stage; adjoining it, on the south, a long colonnade which had the Ionic capitals with bulls' heads at the sides, and intercolumniations originally very wide, but later divided by inset columns; still further south, across a large open space, a water tower built at different times, the last restoration by Constantine and Constantius being well preserved; and the foundations of a round building called the grave of Luke, which had false windows, and which was in Christian times turned into a chapel, or the crypt of a church. (*Arch. Anz.* 1909, col. 87.) The colonnade is discussed at greater length by W. WILBERG in *Jh. Oest. Arch. I.* XII, 1909, pp. 207-214 (11 figs.). It was 5.70 m. wide, and about 50 m. of it has been uncovered. As yet no part of the entablature above the architrave has been found. It dates from the first century B.C. The capital with the bulls' heads found by J. T. Wood belonged to this building.

ILETUS. — **Excavations in 1908.** — In 1908, the expedition of the Berlin museums excavated in the Hellenistic-Roman city some baths which typify the transition from a Hellenistic gymnasium to Roman baths, and the large South Market-place, which had in the Greek time the form of a horseshoe with a street and a row of chambers along the open side, but was changed in the Roman epoch to a closed agora; also, in the same quarter, a late Roman temple of Sarapis and Isis, which had bust-reliefs of gods in the ceiling panels of the pronaos, and a cella like an early Christian basilica, with two rows of smooth monolithic columns. The Hellenistic city wall was followed to the southeast, where there is a gate and where it is cut by a Roman aqueduct on arches. A further unexpected extension of the old city of Miletus has been traced by house-walls and sherds of the sixth century.

In the early part of 1909, further excavations at the great temple at Didyma resulted in the recovery of a considerable part of the plan and construction, as well as of the decorated members. (*Arch. Anz.* 1909, cols. 88-90.)

SAMOS. — **Excavations.** — Dr. Wiegand of the Berlin Museum has made a compact with the prince of Samos by which the Royal Museum will be permitted to carry on excavations in Samos for ten years. The funds will be contributed from private sources, and twenty thousand marks have already been subscribed for the excavation of the Heraeum. (*Nation*, December 16, 1909, p. 604.)

TRALLES. — **An Inscription relating to the Aqueduct.** — In *R. Et. Anc.* XI, 1909, pp. 298-300, M. PAPPACONSTANTINOU publishes an inscription found at Tralles in 1905 by Turks seeking stones for street paving and now lost. It records the building of the aqueduct by the proconsul Montius, and probably dates from the fourth century A.D. It reads:

Καὶ τόδε σῆς ἀρετῆς πανεπίφρονος ἔχοχον ἔργον,
Μόντιε κυδίεις, ἀνθυπάτων ὑπάτε,
Ος δολικοῖς ἔργοισι καὶ οὐδεος ὑδατος ὀλκὸν
Κείμενον ὀρθίσας δοτν τοῦ ἡγελάτος,
Καὶ ποταμὸν σταδίουσι τριγκοσίουσιν ὀδεύσας,
Οὔρεα τετράπας, ἐς πόλιν ἡνύσασ.
Τούνεκα Τραλλιανών ἐπὶ ἔργῳ στῆσε σε βουλή,
Σωτῆρα Κτίστη μόντιον ἀζομένη.

GREECE

THE WORK OF THE GREEK ARCHAEOLOGICAL SOCIETY IN 1908. — The recent work of the Greek Archaeological Society has been largely that of restoration and preservation, the most important undertakings since the actual rebuilding of the Erechtheum being the beginning of the same work for the Propylaia of the Acropolis, the partial erection of the Propylaia at Epidaurus, in the museum there, and the theoretical reconstruction of the tholos of Epidaurus. The last-named building consisted of a circular wall pierced with door and windows, between two concentric rings of columns, the outer Doric and the inner Corinthian, and had a domed roof over the cella covered by a flat conical roof reaching over the whole. The use of the underground passages is still unknown. New discoveries, though less striking, are of some historical value. They include archaic temples, Mycenaean and pre-Mycenaean graves, etc., in Naxos, Sunium, Thessaly, Aetolia, Acarnania, Cephallenia, and other parts of Greece. An undisturbed late-Mycenaean burial ground in Cephallenia gives a good picture of the humbler life of that time. (G. KARO, *Arch. Anz.* 1909; cols. 105-108; 4 figs.)

ANDROS. — **Fragments of Inscriptions.** — Fragments of inscriptions from Andros are reported on by F. HILLER VON GAERTRINGEN in *Ath. Mitt.* XXXIV, 1909, pp. 185-187.

ARGOS. — **New Fragments of an Inscription.** — In *B.C.H.* XXXIII, 1909, pp. 171-200, W. VOLLMGRAFF gives a revised reading of an inscription of the third century B.C. relating to changes and additions at the sanctuary

of Apollo (published by him, *ibid.* XXVII, 1903, p. 270), and adds two new fragments of the same stele on which is recorded an oracle given to the Messenians between 146 and 93 B.C. This throws light on the inscription relating to the mysteries of Andania (Dittenberger, *Syll.* No. 653). Several new names of Argive phratries occur, bringing the number of names known up to twenty-eight. Pages 182-200 are devoted to a discussion of these phratries.

ATHENS. — **Acquisition of Coins by the National Museum.** — In *J. Int. Arch. Num.* XI, 1908 (published 1909), pp. 249-328 (pl.), I. N. SVORONOS reports the acquisition of 2973 coins by the National Numismatic Museum of Athens for the year ending August 31, 1908. 1410 of these are described.

Three Inscriptions. — In *Ath. Mitt.* XXXIV, 1909, pp. 61-68, J. SUNDWALL publishes three inscriptions. (1) A decree in honor of the officials of a prytany, to be dated about 180 B.C. (2) A list of domains of Athena Polias, 343-342 B.C. (3) Fragment of a decree in honor of a citizen, later than 188-187 B.C.

The Italian Archaeological School. — The organization and scope of the recently founded Italian archaeological school at Athens is set forth in the *regolamento* of the school published in *Boll. Arte*, III, 1909, p. 278.

CARDITZA. — **A Graeco-Roman Tomb.** — A rich tomb has been discovered near Carditza containing a large number of silver vases with applied design, as well as an abundance of gold ornaments and copper utensils. They date, apparently, from the first century B.C. (*Hellenic Herald*, III, 1909, p. 163.)

CRETE. — **ARCHANES.** — **An Inscribed Minoan Utensil.** — In *'Eph. 'Apx.* 1909, pp. 179-196 (6 figs.), S. A. XANTHOUDIDES publishes a small, shallow, heart-shaped libation-cup (?) of white alabaster, found at Archanes, about three miles south of Cnossus. The inscription running around the brim contains twenty-two characters, and a few others have been effaced. The forms of these characters, nearly all of which are familiar from other inscriptions of the Minoan age, date the cup at about the eighteenth century B.C., the beginning of the Late Minoan period. Of great interest is the fact that five or six of the characters appear in the same order on the "table of offerings" from the Dictaean Cave, and four of these, still in the same order, on a steatite cup from Palaikastro; which is strong evidence of the religious character of the inscription, the four characters which appear in all three being perhaps the name of a god.

Remains in Central Crete. — A beginning has been made in tracing the line of settlements along the road which led south from Cnossus to Gortyn. Near Gortyn itself there has been found a pit full of discarded offerings of the fifth to the second centuries. They are chiefly composite lamps, small figures carrying pigs, for Demeter, and terra-cottas of various types which may be copied from statues. Two hours west of Cnossus, at Tylissus, remains have been found which seem to belong to a Late Minoan palace. (*Arch. Anz.* 1909, col. 102.)

CORINTH. — **Discoveries in 1908-09.** — The Roman road to Sicyon, which passes between the Old Temple and the fountain of Glauce, has been traced. In the outer walls of the theatre, Greek masonry is found below the Roman. Four large reservoirs cut in the rock and covered with arched

vaulting of the time of Periander, lie to the south of the Roman constructions at the fountain of Pirene. An Augustan temple, repaired in the second century, to which belong the Corinthian capitals with lions' heads in the foliage, and an unexplored temple, were found. (*Arch. Anz.* 1909, col. 119.)

DELOS. — **The Excavations of 1908.** — In *C. R. Acad. Insc.* 1909, pp. 397-417 (plan; 8 figs.), M. HOLLEAUX reports upon the excavations at Delos in 1908. The ancient port was examined and found to be an artificial harbor with breakwaters, etc. (Fig. 1). A line of quays 145 m. long runs

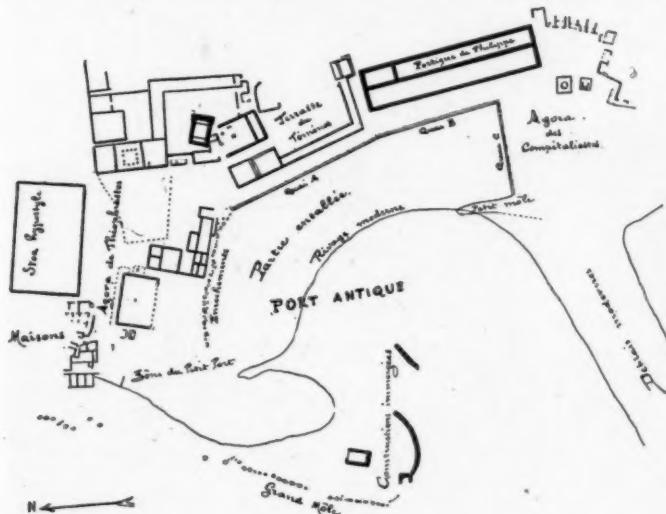


FIGURE 1.—THE PORT OF DELOS.

from north to south, joined at their southern end, at right angles, by another quay 50 m. long. At their northern end is the Agora of Theophrastus, which was found to be in part earlier than the time of Theophrastus. The foundations of two large buildings, probably commercial, were uncovered. West of the Hypostyle Monument a small section not previously excavated was found to conceal house-walls. This was the southernmost part of the town between the Sacred Lake and the sea. In several places very ancient walls were found accompanied by Mycenaean vase fragments. The course of the Inopus, which must have been a considerable stream in early times, was examined and it was discovered that its waters were stored up and controlled by a system of reservoirs. The excavation of the Temenos of Apollo has now been completed and the following report can be made of its buildings. Of the temples of Artemis the one regarded by Nénot as the later is really much the earlier; while the other was an amphiprostyle, tetrastyle, Ionic temple of the third century B.C. The building to the south, once supposed to be

a *bouleuterion*, has not been identified, but may have been an altar; while the one northeast of the Propylaea and southwest of the Temple of Apollo was probably the *olos Naξiaw*, and dates from the sixth century B.C. The monument north of the Dionysium probably dates from the archaic period, but has not yet been identified. The site of the Temple of Apollo has been excavated to bed rock and no trace of earlier foundations discovered. Numerous house-walls were found in the Sacred Precinct with Mycenaean, Geometric, and Protocorinthian potsherds. East of the portico of the Artemisium a great quantity of archaic vase fragments came to light similar to those found in the necropolis at Rhenea. About sixty nearly complete vases can be restored. Behind and at the northeast angle of the Great Portico a public fountain was found cut in the rock. It was closed on three



FIGURE 2.—THE FOUNTAIN MINOE.

sides, but on the north had an entrance with six Doric columns. The entablature was of wood. Ten steps led down to the water. An inscription Σπόριος Στερτίνος Σπορίου Νύμφαις Μινότου identifies it as the *κρήνη Μινόη* (Fig. 2). It seems to have been constructed in the fifth century B.C. and rebuilt in the second. In clearing out the fountain a bronze relief of Hellenistic date, representing a sacrifice to Hecate (Fig. 3), was discovered. The only other piece of sculpture brought to light during the year was the torso of an archaic Apollo. Seventy-two inscriptions were found.

A Dedication to "Palestinian Astarte."—In *C. R. Acad. Insc.* 1909, pp. 307-317 (fig.), C. CLERMONT-GANNEAU publishes a round altar found at Delos in 1907 bearing two inscriptions. The first reads Δι Ούριον καὶ Ἀστάρτη Παλαιστήνη | καὶ Ἀφροδίτη Ούρανία, θεοῖς ἐπηκόοις, | Δάμων Δημητρίου Ἀσκαλωνίτης, | σωθεῖς διπό πειρατῶν, | εὐχήν. The second, a little

below, reads, *Οὐ θεμιτὸν δὲ προσάγειν | αἴγειν, νίκον, βοὸς θηλείας.* This is the first mention of Palestinian Astarte in a Greek inscription.

GONNUS. — **Miscellaneous Antiquities.** — In *Ath. Mitt.* XXXIV, 1909, pp. 80-84 (fig.), H. G. PRINGSHEIM publishes a grave stèle, two grave inscriptions, and three votive inscriptions from the site of the ancient Gonnus



FIGURE 3.—SACRIFICE TO HECATE: BRONZE.

in Thessaly. The relief on the stèle represents a youth who holds a dove, and is accompanied by three children.

KRIKOUKI. — **Proxenia Decree of the Boeotians.** — In *'Εφ. Ἀρχ.* 1909, pp. 55-56, S. N. DRAGOUMES publishes a proxenia decree of the Boeotians in honor of one Polyxenus, found at Haliartus and now at Krikouki.

LACONIA. — **Topography.** — In *B. S. A.* XIV (session 1907-1908), pp. 161-182 (map; 5 figs.), A. J. B. WACE and F. W. HASLUCK describe, with some discussion, the historical geography and the antiquities of the southeastern promontory of Laconia from Acriae on the Laconic Gulf to Epidaurus Limera. A few inscriptions are published. At Neapolis-Vatika are some sculptures of Roman date.

LAKE COPAIS. — **A Hoard of Bronze Coins.** — In December, 1908, a hoard of 1549 bronze coins was found in the middle of what was once Lake Copais. All but two are Boeotian. The coins were probably sent to the

Boeotians by Antigonus Doson about 220 B.C. to enable them to make the march to the Isthmus. (I. N. SVORONOS, *J. Int. Arch. Num.* XI, 1908 (published 1909), pp. 230-232.)

LARISSA. — **A Vaulted Tomb.** — In 'Εφ. 'Αρχ. 1909, pp. 27-44 (3 figs.), A. S. ARVANITOPOULOS describes a very interesting vaulted tomb of the third century B.C. excavated by him near Larissa in 1906. Its external dimensions are: length 3.77 m., width 2.58 m., height 2.95 m. It is built of poros stone in regular ashlar courses, with a true semi-cylindrical arch for roof. The door was closed by a marble slab. The ashes of the occupant were probably placed in an urn set in a hollowed block of stone, which latter was found in the tomb. The whole structure was probably then completely and permanently covered by a mound of earth. This is the first tomb of this type to be discovered in Thessaly. Several have been found in Macedonia, where this prehistoric type seems to have been revived and later adopted generally in Greece in the Macedonian era. Plato's description of the magnificent burial of the Rulers of his State (*Laws*, XII, 947, b-e) was probably based on a similar burial he had seen in Thessaly.

LEUCAS. — **Excavations in 1908.** — A fifth "Letter on Leucas-Ithaca" contains the results of Professor Dörpfeld's excavations in 1908. A visit of the German Emperor and Empress (May 4) is described at some length, and in connection with this a topographical description of Leucas and the neighboring coasts and islands is given. The excavations in the plain of Nidri were difficult, on account of the ground-water, but additional walls of the large building regarded as the palace were found and examined. Graves of various shapes and dates were found; the most striking, however, are near the "palace." These graves are rectangular, but are enclosed in paved circles resembling threshing floors. Five such circles were found near the palace. The largest is 9.20 m. in diameter and encloses a rectangular grave 1.80 x 1.50 m. None of the circles could be completely uncovered on account of olive trees which grow over them. The objects found in the graves are not striking, but are sufficient to establish their date in the second millennium B.C. At the southern foot of Mt. Skaros a family burial-place containing a dozen separate graves was found. As there were walls both above and below, the continuity of the settlement and the relative date of the graves were clearly indicated. Everything, the date, the pottery, the weapons, the mode of burial, points to the identity of those who dwelt here about 1500 B.C. and later with the Achaeans of Homer. In and near the chapel of Hagia Kyriaki several fragments of terra-cottas and a few entire specimens were found. Some are primitive figures, some female heads of the classic period, some pieces of small reliefs; one relief represents a woman who holds out her hand to another (almost entirely broken away) and seems to be dancing with her. Perhaps this was a shrine of the nymphs. A review of publications on the Leucas-Ithaca question is appended. (*Fünfter Brief über Leukas-Ithaka: Die Ergebnisse der Ausgrabungen von 1908.* Von Wilhelm Dörpfeld. 47 pp.; 4 pls.; 4 figs. 8vo. Dated Leukas, May, 1909, and finished, Pergamon, October, 1909. Privately printed.)

LIVATHO. — **A Mycenaean Necropolis.** — In *C. R. Acad. Insc.* 1909, pp. 382-391 (7 figs.), P. KAVVADIAS reports upon his excavations at Livatho, near Masara Kata, on Cephalonia in 1908. In addition to the four Mycenaean tombs previously discovered, he found twelve more, for the most

part intact, containing forty-seven graves cut in the rock. This cemetery, therefore, contained sixteen tombs with eighty-three graves cut in the rock, and one domed tomb. Objects of gold, bronze, stone, glass, two pieces of a golden girdle, arrow-heads, stirrup-cups, and vases of local shape came to light. Many skeletons, with the skulls in perfect condition, were also found. All the bodies were interred, not cremated. Kavvadias would date the graves between the fifteenth and twelfth centuries, although some of them may be earlier. Near by a number of holes about 1 m. deep and 1 m. in diameter cut in the rock were probably used for the storage of grain, and point to the existence of a prehistoric town in the vicinity.

OLYMPIA. — **Discoveries in 1909.** — At Olympia, the terrace of the Treasuries was found to be an artificial level, covering part of the prehistoric settlement (see *A.J.A.* XIII, p. 357). This village had a considerable extent and duration, but is wholly within the Stone Age. Two curved walls hitherto interpreted as part of an altar of Zeus, are only two of its apsidal houses. An inundation buried it in a layer of sand, and on this the earliest beginnings of the sanctuary were laid, but after how long an interval is not evident. A prehistoric settlement on a hill about a kilometre east of Olympia, where a few Greek sherds were found, but nothing Mycenaean, confirms the tradition that this was the site of Pisa. (*Arch. Anz.* 1909, col. 121.)

ORCHOMENUS. — **An Arcadian Synoecism.** — An inscription recording the terms under which the Euaenians were made citizens of Orchomenus in Arcadia is published by A. v. PREMERSTEIN in *Ath. Mitt.* XXXIV, 1909, pp. 237–268. The forms of the letters and the use of the Arcadian dialect help to date the document about 300 B.C. The union seems to have been brought about by some force from outside, perhaps by Demetrius Poliorcetes. An Iolaus mentioned in the inscription may be identical with the Iolaus who was one of the lieutenants of Demetrius.

PAGASAE. — **Recent Excavations.** — Further work by A. S. ARVANI-TOPOULLOS at Pagasae (see *A.J.A.* XII, pp. 103 and 364–365; XIII, pp. 211 and 358) has revealed the foundations of a temple of the fourth century B.C. on the Acropolis. The architectural fragments of Pentelic marble found in the vicinity are so fine that they are compared by the excavator with those of the Erechtheum. A number of painted stelae were found, including the lower half of the one with the remarkable death-bed scene. It had been used in a Turkish building and the painted design was almost gone, but below was carved this inscription :

Αυτρὸν ἐφ' Ἡδίστηγο Μοῖραι τότε νῆμα(α) ἀπ' ἀτράκτων
κλώσταν, ὅτ(ε) ὁδίνος νύμφη ἀπτριτίσσεν·
σχετλίη· οὐ γὰρ ἔμελλε τὸ νῆπιον ἀνκαλισθαι,
μαστῷ τ(ε) ἀρδεόντεν χεῖλος ἐσο βρέφον·
ἐν γὰρ ἐστεῖδε φάσις καὶ ἀπτρίγαγεν εἰς ὅνα τύμβον
τοὺς δυστούς, ἀκρίτες τούσδε μολούσα, Τύχη.

(*Hellenic Herald*, III, 1909, p. 163.)

RHITSÓNA. — **Excavations in 1907 and 1908.** — **Boeotian Pottery.** — In *B.S.A.* XIV (session 1907–1908), pp. 226–318 (9 pls.; 22 figs.), R. M. BURROWS and P. N. URE describe their excavation of numerous graves at Rhitsóna, between Thebes and Chalcis (see *A.J.A.* XIII, p. 81).

The chief importance of these excavations lies in the fact that the contents of each grave has been kept carefully separate, so that the vases can be studied in their proper relations. Rhitsóna is probably the ancient Mycalessus. The place was important in the sixth century B.C., but not in later times. A large part of this article consists of a careful catalogue of graves and their contents. From this it appears that the "Boeotian kylix style" flourished at least until the year 500 B.C. and that it underwent great changes during the last half of the sixth century. Boehlau (*Jb. Arch. I.* 1888, pp. 325-364) ascribes some vases and figurines of this style to the seventh century. This is now no longer possible. The development of the style between 550 and 500 may have been affected by Corinthian pottery. Two classes are distinguished, class I about 550 B.C. or slightly later, and class II not much before 500 B.C. In *J.H.S.* XXIX, 1908, pp. 308-353 (4 pls.; 15 figs.), the same authors publish a supplementary article describing the contents of four more tombs. The great number of vases upon this site (over 800) and the conditions under which they were found, make dating possible. Forty inscriptions incised on the black glaze ware are discussed. They include three signatures of the Athenian potter Tisias with the Boeotian alpha; two owners' names, 'Ονασθαός εἰμι and 'Αγρ . . . νιός εἰμι; and one καλός name written in the Boeotian or Chalcidic alphabet.

SPARTA. — **Excavations in 1908.** — In *B.S.A.* XIV (session 1907-1908), pp. 1-158, is a report of the excavations at Sparta carried on by the British School at Athens in 1908. R. M. DAWKINS gives (pp. 1-3) a brief account of the season's work and a summary of its results. He also describes and discusses (pp. 4-29; 2 pls.; 10 figs.) the sanctuary of Artemis Orthia. Part of the foundations of the Roman amphitheatre were removed; many carved ivories, lead figurines, and fragments of pottery were found, as was also an early Doric capital, probably from the sixth-century temple. Remains of the primitive temple were discovered south of the sixth-century temple. Apparently it had a row of pillars in the centre. It was built of brick and wood resting on a stone foundation, and in plan was even more primitive than the Heraeum at Olympia. In excavating, the strata were carefully observed, so that they can be used in ascertaining dates. The pottery is treated (pp. 30-47; 2 pls.; 10 figs.) by J. P. DROOP. Since the Spartan pottery is strictly local, the style after the Geometric Age is treated under six periods, Laconian I (700-625 B.C.), II (625-600), III (600-550), IV (550-500), V (500-425), VI (425-350). In periods I, II, and III the clay is completely covered by the slip; in IV the slip is of poor quality and is sometimes wanting; in V and VI no slip is used. The vases hitherto known as Cyrenaic fall for the most part into Laconian IV, though some must be placed in Laconian III and V. The archaic terra-cottas are treated by J. FARRELL (pp. 48-73; 8 figs.). They are for the most part rude. Many represent the goddess Artemis Orthia, usually upright, but also enthroned or on horseback. They are classified as "small hand-made human figures," "hand-made figures of animals," "more advanced hand-made seated figures," "moulded figures of enthroned goddesses," "figures of equestrian goddesses," "upright and draped representations of the goddess and *protomai*," "nude female figures," "male figures," "grotesque figures," "miniature masks," and "miscellaneous terra-cottas." The inscriptions are published and discussed by A. M. WOODWARD (pp. 74-141; 6 figs.; 13

facsimiles). Nos. 66-95 are new, and new fragments of Nos. 47, 24, 45, 60, 48, 20, and 19 are published. All of these relate to the παιδικός ἀγών. Eight other inscriptions (Nos. 1-8), ranging in date from the second century B.C. to the second century A.D., are also published, and the patronomate of the divine Lycurgus (who was elected patronomos at least eleven times) is discussed at some length. Thirteen inscriptions (Nos. 48-60) were found in excavations along the south face of the late-Roman wall. One of these mentions γυναικονόμος as a state magistracy. Nos. 61-69 are from other sites (acropolis, etc.). These are for the most part, as indeed are the others, of late date and fragmentary. Corrections to *C.I.G.* 1327, 1270, 1354, 1399, 1370, and 1380, copied by Fourmont, are added. Excavations on the site of the Hieron of Athens Chalcioecus are described by G. DICKINS (pp. 142-146; 2 figs.). In general they confirm the results reached by the excavations at that site in 1907. A primitive relief of a standing draped female figure, inscribed *φανετίβιος*, exhibits the principles of Spartan relief visible in the stele from Chrysapha. It may be dated in the second half of the sixth century. Various small objects were found, among them a bronze statuette of the armed Aphrodite, the style of which recalls the school of Praxiteles. A marble head of a satyr is discussed by A. J. B. WACE (pp. 147-148; fig.) and ascribed to the third century B.C. It shows the qualities of the earlier Pergamene statues, but is of Laconian marble, and seems to be the first original work of the so-called Pergamene style found on the mainland of Greece. A hoard of Hellenistic silver coins is described and discussed by A. J. B. WACE (pp. 149-158; 2 pls.). They were found in an earthen vase. They include coins of Thrace (Lysimachus, 321-281 B.C.), Macedonia (Alexander the Great, 336-323 B.C., Demetrius I, 306-283 B.C.), Attica, Laconia, Syria (Seleucus I, 312-280 B.C., Antiochus I, 280-261 B.C., Antiochus II, 261-246 B.C., Antiochus III, 222-187 B.C.), and Egypt (Ptolemy I, 305-285 B.C., Ptolemy II, 285-246 B.C.). The hoard cannot have been buried before 222 B.C., nor very much later. The Laconian coins with the Heracles type may be assigned to Nabis or his predecessors Machanidas (210-207 B.C.), or Lycurgus (220-212 B.C.), and those with the Apollo of Amyclae on the reverse to Cleomenes III (235-221 B.C.), in spite of different views advanced by Seltman (*Num. Chron.* 1909, pp. 1 ff.).

At the Annual General Meeting of the British School at Athens, October 19, 1909, R. M. Dawkins made a report upon the most recent excavations at Sparta and showed that the goddess was called Orthia simply until a late period. She was a nature deity brought into the country by the invading Dorians, and is depicted as a winged woman fully draped and "supported" by two animals which are sometimes lions and sometimes aquatic birds (*Athen.* October 23, 1909, p. 502). The relation of the temple to the theatre is now clear. The temple, which was Doric distyle *in antis*, as a votive tablet shows, stood in the place of the proscenium. Another tablet shows that the sculptures of the pediment consisted of two lions facing each other with one paw raised. Part of the mane of one of these has been found. The excavators also came across the old precinct wall dating from the ninth century B.C. An inundation of the Eurotas about 700 B.C. buried the whole enclosure in sand, a layer of which separates the later temple from the earlier. The little lead figures of gods, men, animals, etc., are found both above and below the bed of sand. The terra-cotta

masks belong chiefly to the sixth and fifth centuries. At the Menelaum, where Helen was worshipped, two miles southeast of Sparta, remains of a building 79 by 55 feet were found. In one corner was a higher structure, perhaps a domed monument. Many Mycenaean remains came to light, but as yet no tomb. The votive offerings are similar to those found at the temple; and it is argued that the Laconian Helen was originally a nature goddess closely akin to, if not identical with, Orthia. Excavations will be continued upon this site. (*Hellenic Herald*, III, 1909, p. 177; *Arch. Anz.* 1909, cols. 111-115. See also *London Times*, September 25, 1909.)

SYROS. — **A Grave Inscription.** — A grave inscription from Syros is published by N. POLITES in *Ath. Mitt.* XXXIV, 1909, pp. 183-184.

THASOS. — **Various Remains.** — In 'Εφ. 'Αρχ. pp. 1-26 (6 figs.), (cf. *R. Arch.* 1909, pp. 1-14; *A.J.A.* 1909, p. 506), W. DEONNA describes antiquities of Thasos including the old town-wall and two of its gates. He also describes a curious shrine of Pan in the form of a conch-shell, cut out of the solid rock; and the ancient quarries on the promontories Phanari and Bathy; locates the ancient gold-mines (cf. *Hdt.* VI, 47) in the northeastern part of the island; and publishes some 44 inscriptions mostly funereal and very fragmentary. He further emphasizes the need of systematic excavations before it is too late.

THEBES. — **The House of Cadmus.** — In 'Εφ. 'Αρχ. 1909, pp. 57-122 (3 pls; 20 figs.), A. D. KERAMOPOULLOS gives a preliminary account of his excavations in 1906 in the midst of modern Thebes (see *A.J.A.* XI, 1907, pp. 96-97), where he found foundations of an extensive Mycenaean building (Late Minoan II) which was destroyed by fire in the early years of Late Minoan III. In plan and construction it resembles the Cretan palaces more than it does the Peloponnesian, and seems to have been two, possibly three, stories high. Among the finds that deserve mention were numerous fragments of fine wall-frescoes in various colors, representing human forms, flowers, and other objects, in the style of the later palace frescoes of Knossos, large numbers of Mycenaean vases and vase fragments, and pieces of a beautifully carved marble border probably used to adorn the lintel and jambs of a door. The fact that the site of this burnt palace, situated on the summit of the second of the four hills which formed the ancient Cadmea, shows no signs of later occupation before the Christian era is proof that the ground on which it stood was held sacred by the Thebans ever after. In all probability then, Keramopoulos has found the palace of which the charred remains were venerated by the Thebans as the palace of Cadmus, destroyed by Zeus when he appeared in all the splendor of his lightnings to the hapless Semele, whose room especially was ἄβατον down to the time of Pausanias. (Cf. *Paus.* IX, 12, 3-4, and Euripides, *Bacchae*, 1-12.)

TIRYNS. — **Excavations in 1909.** — Further digging in the southern part of the hill at Tiryns has exposed parts of both the earlier and the later castle, and pre-Mycenaean remains, to which belong some buildings with curved outline, but nothing is found corresponding to the oldest stratum at Orchomenus. On the plastered floors of the palace, together with purely decorative designs, pictures of sea-creatures swimming in blue water are found. The remains of the lower town are extensive, those on the south side of the hill being early and those on the north side late Mycenaean. The geometric remains so far found are confined to the graves and their

contents which cover the hill; but these give the first complete picture of Argolic geometric pottery. The geometric burials are in pithoi or cramped in stone coffins. (*Arch. Anz.* 1909, cols. 121-122.)

ZERELIA. — **Prehellenic Remains.** — In *B.S.A.* XIV (session 1907-1908), pp. 197-223 (19 figs.), A. J. B. WACE, J. P. DROOP, and M. S. THOMPSON report their excavations and discoveries in 1908 at Zerelia, in Thessaly (see *A.J.A.* XIII, p. 85). Fragments of Byzantine glazed pottery and of late black glazed Greek pottery were found. These last, with some badly built walls, indicate the existence of a Hellenic hamlet. The temple of Athena Itonia was probably near Kierion. Beneath the Greek layer was a rich prehistoric deposit from six to eight metres thick. A complete stratigraphical record was kept and eight successive settlements were distinguished, dated approximately from 2500 B.C. to 1100 B.C. All these are neolithic, though in the latest settlement late Mycenaean (Late Minoan III) sherds were found. The Bronze Age came late in Thessaly. The potter's wheel does not occur before the eighth settlement and was probably, like bronze, introduced from a Mycenaean source. Before this time there seems to have been no close connection between Thessaly and southern Greece. The pottery is classified as follows: Fine red ware (small vases), ware decorated with red linear figures on white ground, and a coarser ware of the same clay as the preceding, all local ware, abounding in the first four settlements, less common in the fifth, but occurring even in the seventh; coarse monochrome ware occurring in settlements 2, 3, and 4, but abounding only in settlements 5-8; black polished ware occurring in settlements 3 and 4, but abounding only in settlements 5-8; imported Dimini ware occurring in settlements 2-7; wheel-made vases and imported Mycenaean sherds in settlement 8. Rude terra-cottas occur in all strata. Cist tombs belonging to the eighth settlement were found. Hardly any remains of buildings were discovered, but one building was evidently rectangular, or, at any rate, not round. An appendix contains a discussion of some points of the topography of Phthiotis, by W. VOLGRAFF.

ITALY

THE ITALIAN LAW RELATING TO ANTIQUITIES. — The text of the Italian law of June 20, 1909, relating to the exportation of antiquities, works of art, etc., is published in full in *Boll. Arte*, III, 1909, pp. 274-277.

MINOR DISCOVERIES. — Among minor discoveries chronicled in *Not. Scac.* 1909, may be noted the following: at **Acquapendente**, a sepulchral cippus with fragmentary Latin inscription to an Afranius (p. 292; fig.); at **Albate (Transpadana)**, a tomb of the early Iron Age (p. 264); at **Casteggio**, remains of a Roman villa (pp. 262-263); at **Cividale (Venetia)**, a Veneto-Illyrian necropolis (pp. 75-76); at **Civitavecchia**, a hemispherical basin, mended with lead, made from the lower half of a large *dolium*, a discovery helpful for the topography of the ancient city (p. 79); at **Corchiano (Etruria)**, a pit-tomb with little furnishing (pp. 78-79); at **Cremona**, a bronze piliate helmet (cf. incomplete list of this type by PARIBENI in *Ausonia*, 1908, pp. 281 ff.), and another of plain round type (G. PATRONI, pp. 275-276; 2 figs.); at **Gambara (Brescia)**, a dagger of the

Bronze Age (p. 277; fig.); at **Milan**, remains of the Roman city-wall in Via dell' Orso (p. 274); at **Monteriggioni (Etruria)**, an important tomb of the fourth century B.C., with association of cremation and inhumation, and considerable furnishing (pp. 76-78); at **S. Pietro al Natisone (Venetia)**, 43 tombs of cremation, with furnishings (pp. 72-75); at **Pieve Porto Morone** and **Gerenzago (Transpadana)**, prehistoric implements (p. 267); at **Redavalle (Liguria)**, tombs of the Roman necropolis (pp. 261-262); at **Robbio (Transpadana)**, Gallo-Roman tombs (p. 265); at **Rome**, pavements of ancient streets or squares in Piazza S. Giovanni in Laterano (p. 109) and Vicolo Brunetti (p. 110); and on Via Collatina, two chamber-tombs of interesting structure (pp. 111-114; 2 figs.); at **Sulmona**, pavements of mosaic, and traces of the circuit of the Roman city (p. 99); at **Virgilio (Mantua)**, a bust of a Roman matron of the middle of the first century A.D. (p. 277; fig.).

ANCONA. — **A Villanova Urn from Picenum.** — The museum at Ancona has received various objects from Picenum, including the first Villanova urn to be found in this region. (*Arch. Anz.* 1909, col. 127.)

APULIA. — **Discovery of Greek Tombs.** — Greek tombs in Apulia, at **Ruvo** and **Ceglie**, have yielded the finds described by M. JATTA in *Röm. Mitt.* XXIII, 1908, pp. 330-348 (9 figs.). These consist of vases, both black-figured and white-figured, bronze arms and utensils. The article contains also a description of an Apulian vase, with a musical scene.

BARRAFRANCA. — **A Hoard of Coins.** — The discovery in the summer of 1909 of a hoard of eighty-four coins at Barrafranca is described by PAOLO ORSI in *Boll. Num.* VII, 1909, pp. 157-159, who points out the proof therefrom of the promiscuous circulation in Sicily toward the end of the third century B.C. of coins of Roman and of Syracusan mints, and their official equivalence of values.

CASTEGGIO. — **The Ancient Clastidium.** — To *C.I.L.* V, 7357, an inscription from Casteggio containing the ancient name of the city, can now be added another from the same site with the word **CLASTIDI**, thus assuring still further the identification. (G. PATRONI, *Not. Scav.* 1909, pp. 263-264.)

HERCULANEUM. — **Report of the Committee on the Renewal of Excavations.** — In *Rend. Acc. Lincei*, XVIII, 1909, pp. 159-171, G. DE PETRA sums up the work of the committee appointed by the Italian government to investigate the feasibility of renewing excavations at Herculaneum. In view of the fact that no manuscripts and few Greek sculptures have been found outside the Villa of Piso the committee thinks it inadvisable to hasten the work of excavation at the expense of other sites. Nothing can be done until laws are passed defining the rights of property owners. The first work should be devoted to determining the limits of the town, the depths, stratification of the soil, etc.

LAKE OF NEMI. — **New Bronzes.** — In *R. Arch.* XIV, 1909, pp. 177-187 (2 pls.; fig.), S. REINACH publishes a bronze statue (three feet high) and seven small bronze figures which he saw in 1908 in London in the possession of the antiquaries Messrs. Spink. The large figure, cast in nine pieces, with small bits set in to correct faults in the casting, is female, and wears the dress of a priestess. The work is excellent, the style that of the early Empire. The small figures (three male and four female) represent Lares or

Genii and priestesses. All are said to have been taken from the Lake of Nemi. The priestess may perhaps be an idealized portrait of Drusilla (or Antonia?) as priestess of Caligula or of Diana Nemorensis. The history of the imperial galleys or floats on the Lake of Nemi is sketched and discussed.

LOVERE. — **A Pre-Roman Settlement.** — At Lovere, on Lake Iseo, province of Brescia, a number of graves show a pre-Roman Gallic settlement there. A costly funeral outfit of the time of Antoninus illustrates the metal industry of that period. (*Arch. Anz.* 1909, col. 123.)

NAPLES. — **A Greek Inscription.** — In *Ausonia*, III, 1908, pp. 55-56 (fig.), L. CORRERA records an unpublished Greek inscription of imperial date in Naples. It is interesting as showing the use of the Greek language in Naples at a late date. He also publishes two Latin inscriptions.

NOGAROLE. — **Discovery of Coins.** — A much-injured metal vessel found in 1909, at Nogarole contained over three hundred silver coins, most of them drachmas of Massilia with the head of Artemis on the obverse and a lion on the reverse. (*Madonna Verona*, III, 1909, pp. 122-123.)

NORMA. — **Early Settlement.** — Excavations undertaken in the spring of 1905 on the terraces sustained by polygonal walls near the Abbey of Valvisciolo at Norma are only now described by R. MENGARELLI and R. PARIBENI in *Not. Scav.* 1909, pp. 241-260 (30 figs.). They show that settlement began there in the neolithic or aeneolithic period. The settlers were few and poor. The majority of the population lived lower down the hill, and had a different necropolis. The terrace-walls were built for purposes of defence, and may be ascribed to a period between the seventh and sixth centuries B.C., the first settlement being perhaps a century earlier. The end of life here was when that at Norba began, with the founding of the Roman colony.

OSTIA. — **Recent Excavations.** — Excavations between the Via dei Sepolcri, the Baths, and the Theatre have discovered a tomb inscription, nearly complete, of a D. Laberius Fronto, and various sculptural and epigraphic fragments; among the latter one to the *deus sol* may be noted; some are in Greek. Certain sarcophagi were found in the vicinity, one, of unusually good workmanship, displaying three scenes from the Meleager myth. In one of the shops on a portico adjacent to the theatre was found an inscription of the year 173 A.D. of an *ordo corporatorum* with some names previously unknown in Ostian inscriptions. Other shops opening upon the same portico yielded fragments of inscriptions and sculpture. Near the entrance to the theatre was found a fine portrait bust of a young man. Excavations were continued along the Via della Fontana, yielding fragmentary inscriptions and various small objects, among them an inscription of a *corpus fontanorum* that gives for the first time the *praenomina* and *nomina* of the consuls of 232 A.D., L. Virius Lupus and L. Marius Maximus. The excavation of the Baths has been begun. A new portico has been discovered on the Via del Teatro, and this street, and not, as formerly supposed, the nearly parallel Via dei Sepolcri, has been proved to be the *cardo* of the ancient city. The precise course of the river in ancient times probably cannot be determined. Unimportant sculptural and epigraphic fragments were found in the vicinity. A dedicatory inscription to the Nymphs affords a new name to the Latin onomasticon, **TITVS AMINNERICVS.** (D. VAGLIERI, *Not. Scav.* 1909, pp. 82-99, 5 figs.; pp. 116-131, 6 figs.; pp. 231-240, 9 figs.; p. 293.)

OTRICOLI. — **Ancient Necropolis.** — Chamber-tombs of the necropolis at Otricoli are described by E. STEFANI in *Not. Scav.* 1909, pp. 278-291 (map; 8 figs.). Most of them had the vaulting broken in, and showed signs of depredation. The material yield was, therefore, poor. In a building discovered within the limits of the ancient city there were, among other fragments, pieces of Arretine vases, six of them with stamps entirely new. Reproductions accompany the description.

PALESTRINA. — **New Discoveries.** — Excavations in a vineyard between the Via di S. Lucia and Via della Madonna della Aquila, near the putative position of the ancient forum, disclosed remains of a complex of buildings, some of which pertained to baths. (E. GATTI, *Not. Scav.* 1909, pp. 132-135; 2 plans.)

PARRAVICINO and PLESIO (TRANSPADANA). — **Tombs.** — In *Not. Scav.* 1909, pp. 69-72 (3 figs.), A. GIUSSANI describes some recently discovered inhumation tombs of the *Masso-Avello* type, striking for the preservation of their original covers.

PAVIA. — **Western Necropolis.** — On the Corso Cavour, near the gate of that name, in Pavia, has been discovered a necropolis with tombs of Gallic and Gallo-Roman origin, dating from the third century B.C. to the time of the early Roman empire. The rite was generally incineration, and the furnishing almost exclusively of pottery.

POPULONIA. — **Excavations.** — About a large tumulus, explored in 1797, some fifty tombs, with objects of the fourth and third centuries B.C., have been found. The tomb of a young girl contained a gold diadem, composed of olive leaves, with a large rose in the middle and a head of Ammon at the end. In another tomb were three pieces of *aes rude* and an intaglio with a new type of Athena Promachos, also an archaic bronze statuette, once the handle of a cista, representing the suicide of Ajax (see *A.J.A.* XIII, p. 208). Near the tumulus are earlier tombs (ninth to seventh century B.C.). The violent destruction indicated by the condition of the place was, according to Milani, the work of Dionysius of Syracuse, who ravaged the region in 384 B.C. (S. R., *R. Arch.* XIV, 1909, p. 145, from *Frankfurter Zeitung*, January 3, 1909.)

RAVENNA. — **The Palace of Theodoric.** — The palace of Theodoric at Ravenna appears to cover older buildings. The original decoration of the upper story of his tomb is a subject of earnest discussion, and it is suggested that the bronze grating on the cathedral of Aix-la-Chapelle came from there. (*Arch. Anz.* 1909, col. 127.)

ROME. — **The Excavations on the Janiculum.** — In *Mé. Arch. Hist.* XXIX, 1909, pp. 3-86 (14 pls.; 42 figs.; also reprinted separately), GEORGES NICOLE and GASTON DARIEN describe the excavations and discoveries on the Janiculum in 1908 and 1909 to the end of April (see *A.J.A.* XIII, 1909, p. 361). On the site of a precinct dating apparently from the second century B.C. a temple was built toward the end of the second century A.D., and over this, at the beginning of the fourth century A.D., a complex of structures comprising a western temple of the basilica form with an apse, a quadrangular court, and an eastern temple in the form of an octagon with side chambers. The marble statue of Dionysus, with gilded head and hands, is of the type represented by a statue in Berlin (*Beschreibung d. Antiken Sculpturen in Berlin*, No. 87; Reinach, *Répertoire*, II, 119, 5). A well-preserved Egyp-

tian statue of basalt probably represents Nectanebus (dynasty XXX, 378-342 B.C.). Other sculptures discovered are: a seated statue of Hades (?), lacking head, arms, and feet, with drapery over the legs and the left shoulder; a triangular candelabrum base, with a relief representing three nymphs, of neo-Attic style; several fragments; and an idol of gilded bronze. This last was found in the middle of the altar. The figure is represented as if wrapped like a mummy, and a serpent twines about it in seven coils, beginning at the feet, and raises its head above the forehead of the idol. The face of the idol appears to be that of a woman. Several eggs were buried with this strange goddess. The only complete inscription found reads: *Pro salute et reditu et victoria | imperatorum Aug. Antonini et Com(m)odi Caes. Germanic. | principis iurent. Sarmatici | Gaionas cistiber Augustorum. d. d.* Gaionas is known through other inscriptions. The titles used fix this inscription between November 27 and December 23, 176 A.D. Ten other inscriptions on stone (all more or less fragmentary), nine brick-stamps, and sixteen inscriptions on pottery and lamps were found. The eleven coins discovered vary in date from the beginning of the Empire to Constantius II. A mould for medals represents two boxers facing each other, with a large vase between them. Among the walls were numerous tombs and many large jars of earthenware. In *C. R. Acad. Insc.* 1909, pp. 617-647 (plan; 5 pls.; 4 figs.), P. GAUCKLER shows, as a result of the excavations finished in June, 1909, that there was a third temple in the *Lucus Furrinae* on the same site as the temple of Gaionas and dating from the first century A.D. The fourth-century temple was lighted chiefly by the east door; but the two side chambers at the western end had narrow apertures which admitted the rays of the rising sun, so that they struck the divine statues in the niches at the rear. In front of the temple of Gaionas was a *delubrum*, where the worshippers bathed before entering the sanctuary. Various conduits for conveying water were found and examined. Fragments of green, brown, and dark blue glazed tiles which came to light seem to be a distant imitation of the enamelled bricks of Babylonia. They are not found in any other ruin of imperial Roman times, and were probably imported from Syria or Asia Minor in the second century A.D. *Ibid.* 1909, pp. 424-435 (2 figs.), Gauckler argues that the bronze figure of the goddess represents the birth of Atargatis, daughter of Heaven and Earth, who corresponds to the Roman *Fortuna Primigenia*.

Discoveries in the Gardens of Sallust.—Excavations for new buildings in the Villa Flavia, on ground formerly belonging to the Villa Spithoever, have brought to light more garden sculptures, apparently, of the villa of Sallust. A Silenus, of excellent workmanship and animated pose, lacks arms and legs. Sculptured pilasters show delicate high reliefs on one side (heads of Maenad and Silenus), on the other very low reliefs (dancing fauns). They are described by G. GATTI in *B. Com. Rom.* XXXVI, 1909, pp. 284-287 (fig.).

Discoveries near the Porta Portese.—The railway under construction, to connect the Central Station with that of Trastevere, continues to yield numerous inscriptions and sculptures from the right bank of the Tiber. Among the former should be mentioned an Augustan *titulus* of the best type, in honor of Potitus Messalla, *quindecimvir* at the time of the Ludi Saeculares. Among the latter the most conspicuous is a sarcophagus cover, with a grace-

ful reclining figure of a Roman matron, behind whom stands her infant, holding out a dish of fruit. (G. GATTI, *B. Com. Rom.* XXXVI, 1909, pp. 292-300; 2 figs.)

Minor Discoveries. — Minor discoveries of inscriptions at Rome include a fragment of a *laterculus militaris* fitting into *C.I.L.* VI, 32523b, and probably found near the *Castra Praetoria* (*Not. Scav.* 1909, pp. 81-82); a votive inscription to *Serapis Conservator* (two following lines erased, as in *C.I.L.* III, 11157), published in *C.I.L.* VI, 30797, but faultily (*ibid.* p. 80); and various sepulchral inscriptions (*ibid.* pp. 114-115, 227-228), in one of which (*ibid.* p. 230), otherwise carelessly cut, the wife is said to have lived with the husband *sine ulla delecto*, which F. Barnabei explains as meaning "on terms of perfect equality" (but perhaps read *delecto*?).

Excavations in the Circus Maximus. — Excavations conducted under French auspices have enabled M. P. BIGOT to determine the limits of the Circus Maximus. Neither side was straight, though the curvature of the Palatine side was slight, while on the Aventine side the irregularities were very marked. M. Bigot believes that the lateral streets were ultimately spanned with arches, in order that higher tribunes of irregular appearance might be carried on up the slopes of the Palatine and Aventine, — all very different from the conventional Circus Maximus of the imaginative restorer. (*B. Com. Rom.* XXXVI, 1908, pp. 241-253; 6 pls.; 2 figs.)

The Pre-Augustan City Wall. — A stretch of the city circuit-wall showing two periods of structure is described and illustrated by A. PASQUI in *Not. Scav.* 1909, pp. 221-223 (2 figs.). It lies on the approach to the Villa Spithoever from the Via Piemonte, and was indicated by Lanciani in his *Forma Urbis Romae*. The stretch now laid bare is 36 m. long and 9 courses high.

Acquisitions of the Museo delle Terme. — In *Boll. Arte*, III, 1909, pp. 288-306 (2 pls.; 13 figs.), R. PARIBENI publishes the acquisitions of the Museo delle Terme for the year ending in June, 1909. The more important are: the head of an old man, of marble, under life size, with the edge of the toga pulled over the top of the head; a female head of marble with a peculiar head-dress; a head of *Silvanus*; a youthful female head, 33 cm. high; the head of a goddess (*Artemis*?); a small head of *Bacchus*; two small female heads of marble; the fine, unidentified bust of a man found near the *Trastevere* station in 1908; the sarcophagus with a marriage scene found on the *Via Latina* more than thirty years ago and discussed by Helbig and others; the torso of a *Dionysus*; a relief with three male heads from the *Villa Patrizi*; and an elliptical bronze plate, perhaps a matrix for glass paste gems, with the head of *Caesar* cut on it.

A Battle with the Hydra. — In *Jh. Oest. Arch.* I. XII, 1909, pp. 183-185 (3 figs.), W. AMELUNG publishes a small bronze statuette recently in a private collection in Rome. It is less than 2 inches high, and represents a hook-nosed man with a club struggling against a hydra which is part of his own body. The face is that of a Roman of imperial times.

Military Standards in Relief. — Three military standards, one with the eagle, two with hands, sculptured in relief on a cippus used now in the altar of the crucifix in the church of S. Marcello al Corso, are pictured and described by A. PASQUI in *Not. Scav.* 1909, pp. 223-227 (2 figs.).

SARDINIA. — Dolmens. — Messrs. Duncan Mackenzie and Thomas

Ashby have discovered several dolmens in Sardinia. One, near the village of Arustis, forms the transition between dolmens and the "tombs of the giants." Another is covered by a monolith 13 x 17 ft. in size. The discoverers have no doubt that the dolmens are earlier than the nuraghi and the "tombs of the giants." (S. R. R. *Arch.* XIV, 1909, p. 145, from *The Nation*, April 1, 1909, pp. 342-343.)

Necropolis at Alghero.—A necropolis of artificial caves has been excavated at Alghero, and is described at length by A. TARAMELLI in *Not. Scav.* 1909, pp. 100-108 (9 figs.).

Baths at Cagliari.—In the district of Cagliari known as Bonaria (possibly from Balnearia) has been uncovered a very interesting thermal establishment, with fine mosaic pavements (described at length by A. TARAMELLI, *Not. Scav.* 1909, pp. 135-147; 5 figs.). The opening of 193 Punic tombs, relatively poor in furnishings because for the most part earlier rifled, is chronicled by A. TARAMELLI, *ibid.*, 1909, pp. 293-296.

SICILY.—**Prehistoric Settlements.**—A large prehistoric village on a low hill near the shore at Girgenti contains remains of the first and second Siculan and the Mycenaean periods, and presents some unusual features. The houses, which are somewhat scattered, are round, with base walls of stone, undoubtedly once surmounted by plastered wattling. A large circular paved area to which several radiating streets lead, contains six buildings, round, square, and octagonal. Outside of it lies a hut in which were objects like those in the shrine of the Kamares period at Phaeustus, indicating its religious character. Another Siculan village near Catania contains caves cut in the rock and round huts built on the ground, both used as dwellings at the same time through the two periods. The continuity of the first and second Siculan periods may now be considered established. A Hellenized Sicel town at Grammichelle, near Catania, shows that in the classical period, Sicilian life drew more from the mainland of Greece than from Asia Minor. The relations with the Aegean Islands in the earliest period are a subject for further study. (*Arch. Anz.* 1909, cols. 134-136.)

The Site of Eryx.—In 1907-1908, J. KROMAYER of Vienna spent nine months in studying the battle fields of the Punic wars in Africa, Italy, and Sicily. At Monte San Giuliano, near Trapani, west end of Sicily, the site of the ancient city of Eryx was determined and the conditions of Hamilcar Barca's two years' resistance of the Romans more clearly explained. A thorough excavation here, especially at the sanctuary of Aphrodite, which was once a religious centre of great importance in the western Mediterranean, is much to be desired. (*Arch. Anz.* 1909, cols. 50-51.)

SYRACUSE.—**A Hoard of Archaic Bronzes.**—The museum at Syracuse has recently acquired a great hoard of bronzes weighing about a ton found near Aderno. It dates from the eighth century B.C., and contains some fine specimens of spears and axes, as well as pieces of vases, fibulae, etc. The hoard may be compared with the great hoard of bronzes found at Bologna. (*Boll. Arte*, III, 1909, p. 318.)

VERONA.—**Miscellaneous Antiquities.**—A number of miscellaneous Roman antiquities, including two Latin inscriptions, have recently been found at Verona. (*Madonna Verona*, III, 1909, p. 123.)

VETULONIA.—**Minor Discoveries.**—A pit filled with stones, in the necropolis at Vetulonia, contained numerous small objects of bronze, amber,

glass, etc., among them the butt-end and three-pronged head from a wooden staff, the purpose of which, whether a weapon, a fishing spear, or a royal or priestly attribute, is not evident. (Arch. Anz. 1909, col. 127.)

VITERBO. — **The Society "Pro Ferento."** — A society has been formed at Viterbo with the name "Pro Ferento" for the purpose of excavating the ancient city of Ferento, destroyed in the eleventh century of our era. Brief excavations have revealed the site of the baths and an unexplored tomb, and have brought to light three statues which have been removed to the museum at Florence. (R. SCIAVA, *Atene e Roma*, XII, 1909, cols. 57-58.)

FRANCE

ALISE. — **A Temple of the Fountain Alesia.** — Following out the suggestion of C. Julian that Alesia was the name of a fountain, É. Espérandieu sought and found the temple of this goddess on the east side of Mont Auxois. It is octagonal in shape, each side being 7.50 m. long. Numerous votive offerings of bronze (Fig. 4), among them a small head of a child and various parts of the human body, came to light. Near this temple foundations of a rectangular building, 12 m. by 6 m., probably another temple, were uncovered. The inscriptions consist of a few letters only. About 50 m. northeast of the octagonal building a small square structure, 2.78 m. long on each side, was discovered. In the centre of it is a basin cut out of a single block and supplied with water from the sacred spring. The head of a female statue still retaining considerable color was found in it. The hair is red, the crown of grain yellow and green. The building dates from the first



FIGURE 4.—BRONZES FROM ALISE.

part of the second century A.D. (É. ESPÉRANDIEU, *C. R. Acad. Insc.* 1909, pp. 498-506, 3 figs.; pp. 522-527, 2 figs.)

MONT AFRIQUE. — **A Latin Inscription.** — In *B. Soc. Ant. Fr.* 1909, pp. 179-180, A. HÉRON DE VILLEFOSSE publishes a Latin inscription recently found at Mont Afrique, 12 km. west of Dijon, and not yet perfectly understood. It reads . . . VAVITMAVRVSIO.

PARIS. — **A Marble Torso of a Satyr.** — In *R. Ét. Gr.* XXII, 1909, pp. 140-144 (2 figs.), E. MICHON publishes a marble torso, 14 cm. high, in the collection of Georges Picard at Paris. Its resemblance to the torso of the Belvedere is striking; and the presence of a tail makes it clear that it represents a satyr. This suggests that Hadaczek is right in his interpretation of the Belvedere torso.

A Semitic Seal.—In *C. R. Acad. Insc.* 1909, pp. 333-337 (fig.), C. CLERMONT-GANNEAU publishes a Semitic seal of hematite inscribed "To Abyehai, daughter of Yenahem," recently purchased for the Cabinet des Médailles; and an alabaster ointment bottle of Ptolemaic date inscribed Κιννάμωμον | παρὰ Κρινίππον acquired by the Louvre.

BELGIUM

EXCAVATIONS IN BELGIUM.—In *Arch. Anz.* 1909, cols. 253-255, L. RENARD shows that three tumuli near **Condroy** were examined in 1908 and found to contain no burials. He concludes that such mounds in this part of Liège served as lookouts only. Near **Tongres** among some ordinary Belgo-Roman graves was one containing a finely cut bust and two small columns of jet, besides other trinkets. Several of these burials were by inhumation. A cemetery at **Treignes** yielded coins from Nero to Maximinus. At **Silemrieux** a cavern was found to contain four strata of remains dating from prehistoric to Roman times. At **Trevières** (Hainaut) an iron casque of a rare type was found in a Frankish tomb. In *Bulletin des musées royaux à Bruxelles*, II, 1909, pp. 25-28, A. DE LOË reports briefly upon excavations carried on at **Jodoigne**, **Aywaille**, **Avennes**, **Lustin**, **Waulsort**, **Robelmont**, and **Houdrigny**.

BRUSSELS.—**Acquisitions of the Museum.**—The museum at Brussels has recently acquired an Egyptian "black-topped" vase upon which are drawn a number of antelopes bounding forward. At the left three small triangles represent mountains. The bodies of the animals are covered with lines crossing at right angles. (J. CAPART, *Bulletin des musées royaux à Bruxelles*, II, 1909, p. 8; fig.) *Ibid.* pp. 9-10 (3 figs.), Capart publishes two models of capitals, and one of the side of a door and part of a wall recently received from Egypt. *Ibid.* pp. 50-55 (3 figs.), J. DE MOT calls attention to two Greek vases newly acquired, a black-figured *psyche* and a Panathenaic amphora. The latter is inscribed ΤΟΝΑΘΕΝΕΘΕΝΑΘΛΟΝ and ΠΟΛΥΣΙΗΛΟΣΑΡΧΩΝ. Polyzelus was archon in the year 367-366, and his name is found on another Panathenaic amphora now in the British Museum. The use of Ο for Ω and Ε for Η at this date is noteworthy.

SWITZERLAND

DISCOVERIES IN SWITZERLAND IN 1908.—In *Arch. Anz.* 1909, cols. 255-279, A. SCHULTHESZ gives a review of the archaeological discoveries in Switzerland in 1908. At **Vindonissa** (Windisch) an ancient rubbish heap is proved to go back to about 60 A.D. Writing tablets of fir and beech were found, one with the wax and writing still preserved. At **Königsfelden** the *via principalis* and the *porta principalis sinistra* of the Roman camp have been made out, as well as several other details. There was an earlier camp of wood beneath the stone buildings, but both date from imperial times. At **Augusta Rauracorum** (Basel-Augst and Kaiser-Augst) a round building has been excavated. An inscription gives Magidunum as the Celtic name of the place. Gallic remains of terra sigillata were found near **Bern**. Worthy of notice is a plaque with the bust of a woman in high relief. Roman walls have been discovered in the church of

St. Donatyre near Avenches, in the nave of the church at Ursine near Lausanne, in the town walls of Olten, and in several houses at Windisch. A systematic investigation of the Roman fortifications along the Rhine from Constance to Basel has been begun.

GERMANY

THE WORK OF THE GERMAN ARCHAEOLOGICAL INSTITUTE. — An outline by G. KARO, of the previous year's work and business affairs of the Imperial German Archaeological Institute, with its Athenian, Roman, and Romano-Germanic branches, is given in *Arch. Anz.* 1909, cols. 77-84.

BERLIN. — **Acquisitions of Coins.** — The Berlin museum has recently acquired a number of fine ancient coins from the collection of Artur Löbbecke in Brunswick. The most remarkable are a sixth-century four-drachma piece from Dicaea in Thrace; a fine four-drachma piece from Catana with the signature **EYAIN**; a two-drachma piece of Elis, of the fifth century, bearing the head of Zeus, in perfect preservation; a rare, gold eight-drachma piece with the head of Berenice II; a gold six-drachma piece from Carthage. (K. REGLING, *Ber. Kunsts.* XXXI, 1909, cols. 32-38; 7 figs.)

A Double Solidus of Constantine. — In *Ber. Kunsts.* XXX, 1909, cols. 275-278 (fig.), K. REGLING publishes a gold double solidus of Constantine the Great recently acquired by the Berlin museum. On the reverse is represented the city of Treves with its seven towers, below which are the letters **PTRE**, i.e. *prima (officina) Treverensis*.

An Egyptian Axe. — In *Ber. Kunsts.* XXX, 1909, cols. 278-280 (3 figs.), Dr. MÖLLER publishes an Egyptian copper axe recently acquired by the Berlin museum, with a collection of bronze implements of the Middle Kingdom from the northern part of Upper Egypt.

COLOGNE. — **A Latin Inscription.** — In *Röm.-Germ. Kb.* II, 1909, p. 65, A. VON DOMASZEWSKI publishes an altar inscription found at the southwest corner of the Cathedral at Cologne. The altar was dedicated to Diana by a centurion, and must have belonged to the *virarium*. It mentions the curious fact that fifty bears were caught within six months. Date: second century A.D.

DIENSDORF. — **A Mound Grave.** — In *Z. Ethn.* XLI, 1909, pp. 690-697, H. BUSSE makes a full report (with figures) upon seventeen prehistoric vases from a mound grave near Diensdorf on the Scharmitzelsee. They are of the Lausitz type, ornamented with pointed bosses surrounded by scratched or furrowed circles and lines. The grave is remarkable for the unity of its contents. Other such graves are listed, and their contents dated in the Third Period of the Bronze Age (Montelius), 1400-1200 B.C.

HALTERN I. W. — **Roman Camps.** — In *Röm.-Germ. Kb.* II, 1909, pp. 85 ff., F. KOEPP reports on further excavations on the site of two Roman camps. The foundations of barracks were traced in the later camp, and remains of a large building connected with the praetorium by a colonnade. This building may have been the dwelling of the *legatus*. The excavation yielded a considerable number of pieces of sigilla ware.

JAGSTHAUSEN. — **A Roman Cemetery.** — P. GOESSLER (*Röm.-Germ. Kb.* II, 1909, p. 55) briefly reports on excavations conducted on the

site of a Roman cemetery dating from the second century A.D. The finds of pottery were unusually plentiful. A fuller report is promised, to appear in the *Fundberichte aus Schwaben*.

MAINZ. — **Roman and Early Christian Inscriptions.** — In *Röm.-Germ. Kb.* II, 1909, pp. 66-69, KÖRBER publishes eight fragmentary inscriptions recently brought to light. An early Christian tombstone reads: [*In* hu]nc s(e)pul(c)hro [re]q(u)iūscit Gennarius q(u)i vixit an(n)us XXV. One of the Roman inscriptions mentions C. Aufidius Vittorinus, who was sent by Marcus Aurelius against the Chatti.

MUNICH. — **Acquisitions of the Antiquarium.** — In the *Mün. Jb. Bild. K.* 1909, pp. 74-77 (7 figs.), J. SIEVEKING reports the following acquisitions of the Antiquarium at Munich in the second half of 1908: (1) a marble idol, 7.5 cm. high, of the primitive Cyclades type; (2) a bronze statuette of a running Silenus, 9.5 cm. high, dating from about 500 B.C.; (3) a large bronze hydria from southern Italy of the same date; (4) a bronze mirror from the Peloponnesus of the middle of the fifth century; (5) an Etruscan mirror of good workmanship, with figures of Meleager, Atalanta, Althaea and Porthaon; (6) a terra-cotta plaque from Melos, 17.5 cm. high and 16 cm. wide, representing Odysseus as a beggar appearing before Penelope; (7) four pieces of a cylindrical vessel of terra-cotta from the Piraeus, dating from the first century B.C., two pieces decorated with cupids and two with Greeks fighting Gauls; (8) a small Mycenaean pyxis of steatite, with cover, from Crete. The acquisitions of ancient coins and gems are recorded by G. HABICH, *ibid.* pp. 98-101 (2 pls.). In *R. Arch.* XIV, 1909, p. 148 (after Wolters, *Münchener Neueste Nachrichten*, Beilage No. 150), S. R. reports the acquisition of an Attic stele, on which is a *loutrophoros* in low relief and remains of color in encaustic. The names of the persons represented are Παραμύθιον and Φειδίαδης. A second Attic stele of the second half of the fourth century B.C. bears in relief a seated girl and a servant standing before her. The inscription gives the name Mnesarete, daughter of Socrates.

NIEDERBERG B. EHRENBREITSTEIN. — **Roman Pottery.** — In *Röm.-Germ. Kb.* II, 1909, pp. 69-71, A. GIENTHER reports the discovery of a Roman pottery at Niederberg. The numerous sherds are mostly Flavian and early-Antonine.

NORTH GERMANY. — **Recent Finds of Diluvial Flint Implements.** — In *Z. Ethn.* XLI, 1909, pp. 503-505, H. MENZEL treats of the geological position and distribution of a vast number of prehistoric flint instruments, among them many scrapers and borers of peculiar form. He attributes them to the first and second interglacial periods, regarding them as transitional from the archaeolithic to the palaeolithic stage of culture, as defined by Verworn.

TREVES. — **Underground Chambers of the Amphitheatre.** — In *Röm.-Germ. Kb.* II, 1909, pp. 82-85, E. KRÜGER publishes a preliminary report of the excavations in the arena of the amphitheatre, conducted in 1908 and 1909. The excavations have disclosed the existence of an underground structure similar to the one found at Metz. It has the shape of a cross, irregularly hewn out of the rock, and consists of three parts: (1) a central portion, which seems to have been reserved for the stage machinery, and (2) two wings of unequal dimensions. Remains of the wooden pillars supporting the roof were found, and in the bottom a number of holes at

regular intervals. A mass of miscellaneous objects was brought to light, including sculptured slabs, inscriptions, iron arms, etc.; also three ivory pyxides. Indications point to an occupation of the structure in post-Roman days; perhaps for religious purposes.

VETERA.—**The Roman Camp on the Fürstenberg.**—Further excavations have disclosed the true dimensions of the Roman camp on the Fürstenberg which was occupied jointly by the fifth and fifteenth legions; the camp measured 920 x 630 m. The four gates were located, and with them the *via principalis* and *via praetoria*. At two places a peculiar stamp was found **R, Tra**, which still awaits interpretation. Evidence was found of the existence of an earlier camp. (H. LEHNER, *Röm.-Germ. Kb.* II, 1909, pp. 49-51.)

AUSTRIA-HUNGARY

DISCOVERIES IN AUSTRIA IN 1908.—At Carnuntum the exploration of the *praetentura* has been taken up again after nearly ten years' interval. The officers' quarters and what are apparently barracks have been cleared. Much alteration and addition of buildings is traceable here, especially in the time of Valentinian. Gallic and German pottery is found. Some of the epitaphs on late graves are remarkable for refinement and depth of feeling. At Lauriacum the entire *porta principalis dextra* with a stretch of the adjoining fortifications has been cleared. The *via principalis* is found to be 9 m. wide, the *via praetoria* 6.70 m. This camp has many peculiar features, some of which may be due to rebuilding at various periods. The street that connected the camp with the ancient boundary road has been found leading from the Vienna-Linz road to the decuman gate. The history of the place itself and its relations to the affairs of the Empire and of border nations have been elucidated by a close study of coins found here. Among the small finds are another fragment of the city statutes on bronze, and a bronze hand with the index finger unnaturally long, an appearance which occurs elsewhere but is still unexplained. Near the fortress of Albing, on the Danube, traces of the accompanying civil settlement have been found. Work has been done at Mauer-Oehling, but the name of the Roman camp there is not known. The monumental building on the Helenenburg, ancient Virunum, is found to be early Roman. The base and lower portion of a marble group of an emperor with captive barbarian, over life size, was found at Pola. (F. LOEHR, *Arch. Anz.* 1909, cols. 279-290.)

DISCOVERIES IN HUNGARY IN 1908-1909.—Recent archaeological discoveries and publications in Hungary are summarized by G. V. FINÁLY in *Arch. Anz.* 1909, cols. 290-300 (4 figs.). He gives a plan of the *castellum* at Leányvár, near Izsá, with its gates, towers, baths, barracks, etc. Coins found there date from M. Antonius triumvir to Valentinian and Valens. Systematic excavation of Dacia has been begun. Houses with heating apparatus and, sometimes mosaics, statues, or inscriptions, were excavated at Intercisa (Dunapentele), Porolissum, and Apulum; baths at Kádároszentpéter; a water conduit at Torda (Pataissa); and graves at Intercisa (Roman with first century gravestones used in fourth-century constructions; and 12 Avar graves), Nagybarát (Hallstatt, beneath Roman), and Apulum (Roman, with inscriptions), etc. Among the single

finds were: bronze objects at **Nagydén**, including statuettes of Apollo and of a Lar; a silver plate with eagle in relief, probably a legionary *insigne*; a *tabula honestae missionis*, of the period 128-158; three reliefs of horsemen; and three models of military towers roughly made of the same clay as the military tiles and supposed to be grave monuments. The coins published belong to the republic and the emperors from Nero to Maximian.

RUSSIA

DISCOVERIES IN SOUTHERN RUSSIA.—The chief discoveries in southern Russia during the year 1908, were, as heretofore, small objects, often of great value, from graves. From **Borl**, in Transcaucasia, the Hermitage Museum acquired various ornaments, vessels, weapons, parts of silver-covered furniture, and coins dating from Augustus down to the fifth century A.D. At **Mal'kop**, Kuban district, the objects purchased include gold ornaments and a silver vessel of Cyprian-Phoenician style. At **Tanaïs**, the most northerly Greek settlement, in the new city, built after the destruction of the old one about 100 B.C., on a different site, a necropolis of the second century was explored which contained graves of every sort. The furnishings, comprising ornaments of gold, silver, and semi-precious stones, silver and bronze vessels, weapons, coins, pottery, etc., indicate a wealthy and prosperous city. Here were found gravestones which roughly follow the outline of the human figure. At **Panticapaeum**, a necropolis was explored which contained graves dating from the fifth century B.C. to late Roman times. A painted burial chamber of the fourth century had the walls painted in horizontal bands with small objects represented as hanging on pegs. The pottery includes Hellenistic Greek ware, with a fragment of a medallion cylix, and finely finished red-glazed ware with applied decoration. At **Chersonnese**, over three hundred graves were opened. They were of every kind and showed both rites of burial. One marble stele has a relief of a reclining woman. There is Attic pottery of about 400 B.C., but most of the vases date from the second century A.D. On the island of **Berezani**, the old Ionian houses were found to contain graves with partly burnt remains, under their floors. Archaic terra-cottas and early pottery of several kinds were found. At the bottom of a well were the skeletons of a horse and man, with an iron finger ring, drowned there in the sixth century B.C. At **Olbia**, the Greek fortifications could be traced only by the foundation of layers of ashes and earth, and the stone bases of the towers at the north gate. These are not later than the fourth century B.C. Within the city, six building strata were found, the oldest being of about 700 B.C. and the latest of the time of the Roman emperors. Storage amphoras were found in the oldest city. Stone graves with pitch roofs occur very near the surface of the ground. Some burial chambers had their entrances closed with amphoras. A terra-cotta altar has reliefs like those on a relief vase from Olbia. Sculptures of Pentelic marble occur, inscribed pottery and gravestones, and several inscribed lead tablets. "Scythian" graves were opened at **Chigrin**, government of Kiev, and in **Poltava**, in the Dnieper country, with remains from the fourth, third, and second centuries B.C. (B. PHARMAKOWSKY, *Arch. Anz.* 1909, cols. 140-176; 40 figs.)

SOUTH POLAND.—**Cave Dwellings in Ojoow, South Poland.**—In *Z. Ethn.* XLI, 1909, pp. 745-751 (3 figs.; map), HEINRICH VON DIEST

describes a visit to some caves in Poland, inhabited by prehistoric men, and lists some implements found in or near them.

GREAT BRITAIN

ARCHAEOLOGICAL RESEARCHES IN WALES.—In the *First Annual Report* of the Liverpool Committee for Excavation and Research in Wales and the Marches (Liverpool, 1909, University Press. 86 pp.; 16 pls.; fig.) an account is given of the work carried on in 1908. R. NEWSTEAD (pp. 20-39; 10 pls.) describes a newly found section of the Roman wall at **Chester**, discovered during the excavation for a new telephone station. It is 56 feet 10 inches long and in excellent condition. Arrangements have been made for preserving the greater part of it. He also describes a Roman concrete foundation and a palaeolithic implement from Chester. This article is likewise printed in *Annals of Archaeology and Anthropology*, II, 1909, pp. 52-71. H. S. KINGSFORD (pp. 40-48; pl.; fig.) reports briefly upon eighteen ancient forts in **North Wales** and **Anglesey**. G. CLINCH (pp. 49-52; pl.) reports upon three cromlechs, two forts, and two ancient roads in the **Cader Idris** district. H. G. EVELYN-WHITE (pp. 53-82; 3 pls.) discusses the Roman camp at **Caerleon**, and the excavations of 1908. A considerable portion of a large building and parts of a second were brought to light. The minor finds are also published. In the *Manchester Guardian*, July 7, 1909 (plan; fig.), R. C. BOSANQUET reports upon excavations in Wales in 1909. At **Caersws**, the *praetorium* of the Roman fort was partially uncovered, including the regimental "strong-room"; also a granary and part of another building. The fort was about 660 x 600 feet in extent. At **Caerleon-on-Usk**, an experimental trench revealed an amphitheatre about 274 feet long and 226 feet broad. The outer wall is still standing in places six or seven feet high. Two entrances have been found. The arena was about 200 by 150 feet.

LONDON.—**A New Inscription of Sennacherib in the British Museum.**—The British Museum has recently acquired an eight-sided terra-cotta cylinder, containing about 720 lines of cuneiform writing relating to the history of Sennacherib. It is almost complete and is a remarkably fine example of Ninevite cuneiform. It dates from the year 694 B.C. Among other things it contains accounts of the Assyrian campaigns from 698-695; of the building of the great palace; of the augmenting of the water supply; and of the construction of the inner and outer walls of Nineveh. The names and relative positions of the seven gates are given, which will prove of value for the topography of the city. (London *Times*, December 10, 1909.)

Some Recent Acquisitions of the British Museum.—Some recent acquisitions of the British Museum are illustrated and briefly described by F. H. MARSHALL in *J.H.S.* XXIX, 1909, pp. 151-167 (21 figs.). They are: (1) A copy of a Polyclitan head of a youth, dating from the close of the fifth century, similar to the Westmacott head, but earlier and finer. (2) Marble capital of a pilaster with a group of Leda and the swan on the front; probably copied from a sculptured group at Nicomedia, which is shown on Nicomedian coins of the time of Alexander Severus, early third century A.D. (3) Round marble disk from Athens, with inscription of about

550 B.C. ΓΝΑΘΟΝΟΣ : ΤΟΔΕΣΕΜΑ : ΘΕΤΟΔΑΥΤΟ : ΑΔΕΛΦΕ : ΗΕΛΙΘΙΟΝ : ΝΟΣΕΛΕΥΣΑ : ΣΑ, 'This is the tomb of Gnathon. His sister laid him to rest, having nursed him in vain.' The sigmas are retrograde. The form *ἡλίθιον* for *ἥλιθιον* is to be noted. This is slightly earlier than the Piraeus disk of Aeneas the physician (*Jb. Arch. I. XII*, pl. 1), but of the same size. Such disks were a temporary fashion of the sixth century, and may have served to cover a funeral urn or a hole for putting offerings into the tomb. (4) Stone chest with short legs, movable cover and imitation of a lock plate, from the temple of Cybele at Sardis; inscribed: ΕΤΤΙΕΡΕΩΣΠΑΝΦΙΛΟΥΜΗΤΡΟΔΟ | ΡΟΣΑΡΤΕΜΙΔΩΡΟΥΠΤΕΡΙ-ΠΑΝΤΗΣ. The office of *perirantes*, sprinkler, probably of lustral water, is new, though *periranterion*, for the vessel used, is known at Delphi. (5) Small bronze statuette of Apollo grasping a pair of goat's horns, as a hunter god. Boeotian inscription of about 550 B.C.: ΓΑΝΥΑΡΙΔΑΣΤΟΤΟΠΟΛΟΝΙ. The name Ganyaridas is new. (6) Six silver-plated bronze plaques and one silver gilt, from horse trappings, found in a tomb in Elis. They are embossed with subjects connected with horses, and their position on the harness is shown by that of similar plaques found with the skeletons of horses in tombs in South Russia. They represent the *phalaron*, *prometopidion*, and *paragnathion*, and one, which is lunate, may have been apotropaic. (7) Bronze mirror silvered on both sides, with thin beaten bronze relief of Greeks and Amazons soldered on the cover, latter part of fourth century B.C. (8) Bronze arm of couch to be attached to a wooden frame. Head of Athena, reclining Dionysus, head of Hera, end of third century B.C. After this century couches of a different style were used. (9) Small bronze figure of a young negro, on antique base, with raised left arm which probably held a lamp, first century B.C. or early first century A.D. Negro slaves were introduced into Rome from Alexandria. (10) Terra-cotta food warmer, in the form of a two-storied shrine or round temple, with an actor standing in the upper doorway. A lamp in the chamber behind him would heat the flat bowl which covers the top, Graeco-Roman period. (11) Pair of hollow gold reels, perhaps for winding silk, with Rhodian devices, probably fourth century B.C. (12) Two silver seals from rings, with busts of Hadrian and the names of Callipus, archon, and Cleon, *paraphylax*. The latter title is unusual but occurs on a lead weight, and may denote a warden of weight standards. (13) Amethyst intaglio with bust of an emperor in profile, fourth century A.D.

SILCHESTER. — The Excavations of 1907. — In *Archaeologia*, LXI, 1908, pp. 199–215 (3 pls.; 9 figs.), W. H. ST. JOHN HOPE reports upon the excavations at Silchester in 1907, the eighteenth campaign on the site. Work was carried on in parts of Insulae XXVIII and XXXV. The most important discovery was a small *omega* in Insula XXXV of the same type as the two already known in Insula XXX. A broken inscription preserves the word *Calleva*, which must be the ancient name of the town. The excavation of the site is now regarded as completed. *Ibid.* pp. 215–218, F. HAVERFIELD discusses the three fragmentary inscriptions found.

SOMERSET COUNTY. — A Torques of Gold. — A labourer in Somerset County (England) has found a very fine *torques* of gold, which has been bought by the Somerset Archaeological Society. (S. R., R. Arch. XIV, 1909, p. 283.)

AFRICA

ARCHAEOLOGICAL WORK IN 1908.—In *Arch. Anz.* 1909, cols. 189-227 (8 figs.), A. SCHULTEK publishes a review of the archaeological work done in northern Africa in 1908.

BULLA REGIA.—**The Excavation of the Public Baths.**—In *C. R. Acad. Insc.* 1909, pp. 581-589, Dr. CARTON reports upon his excavations at Bulla Regia in 1909. The site of the public baths was definitely determined and the *hypocaustum* and other parts located. One piece of wall still stands to a height of 7 m. In the west wall of the hall above the *hypocaustum* was a great doorway, 4 m. high, near which was found an inscription in five lines mentioning a new *procurator tractus* *Karthagini* named Rossius.

DJEBEL FERZA.—**An Ancient Berber Necropolis.**—In *C. R. Acad. Insc.* 1909, pp. 289-294, Dr. CARTON gives a brief account of an ancient Berber necropolis found by him at Djebel Ferza, Tunis, but not yet excavated.

HADRUMETUM.—**Discoveries in the Catacombs.**—In *C. R. Acad. Insc.* 1909, pp. 282-289 (plan; fig.), Canon LEYNAUD publishes twelve Latin inscriptions discovered in the catacombs of Hadrumetum in 1908. Several Christian lamps, one of peculiar shape, and two fine mosaics were also found.

IFRI N DELLAL.—**Libyan Inscriptions.**—In *C. R. Acad. Insc.* 1909, pp. 590-593, R. BASSET reports upon the Libyan inscriptions at Ifri n Dellal, Algeria. There are about 335 letters cut on the rock, some of which resemble Touareg characters. They probably date from the second or third century A.D.

KEF.—**A Latin Metrical Inscription.**—In *C. R. Acad. Insc.* 1909, pp. 467-469, A. HÉRON DE VILLEFOSSE publishes a Latin metrical inscription found near Kef, Tunis. The greater part of the first twenty-one lines, containing an invocation to Spring and to the god Silvanus, is preserved. The inscription dates from a good period, but its purpose and its original length can only be conjectured.

UNITED STATES

BOSTON.—**The Museum of Fine Arts.**—A general account of the new building of the Museum of Fine Arts, Boston, and of the arrangement of the collections is given in *B. Mus. F. A.* VII, 1909, pp. 43-66 (12 figs.).

NEW YORK.—**An Acquisition of the Metropolitan Museum.**—The Metropolitan Museum has acquired the statue of an old market woman (Fig. 5), found at Rome in 1907. (*A.J.A.* XII, 1908, p. 106.) The figure is less than life size, and represents an old peasant woman carrying fowls and a basket. The arms are broken off and the face was so badly mutilated that it had to be restored in plaster. There are traces of a bright pink border on the himation, and green on the strap of the sandal of the left foot. The marble has taken on a beautiful old ivory color. The statue is an original Greek work and the most important of its class preserved.

PHILADELPHIA.—**Acquisitions of the University Museum.**—The Free Museum of Science and Art of the University of Pennsylvania has been presented with the life-size torso of the Venus and the marble mask of a river-god, found at Teano in 1908 and published in *Not. Scav.* 1908, pp. 405 and 409.



FIGURE 5.—STATUE OF AN OLD MARKET WOMAN.

EARLY CHRISTIAN, BYZANTINE, MEDIAEVAL, AND RENAISSANCE ART
GENERAL AND MISCELLANEOUS

DISCOVERY OF THE NAME OF THE HAUSBUCHMEISTER.

—H. T. BOSSERT communicates to *Rep. f. K.* XXXII, 1909, pp. 333-334, the interesting fact that he has solved the mystery of the name of the *Hausbuchmeister*, by simply reading backwards the letters on the trappings of the horse on p. 21a of the *Hausbuch* (Fig. 6), viz.: HENRICH · LANG · F(ecit).

CONSTANTINOPLE.—**Byzantine Architecture.**—In *R. Arch.* XIV, 1909, pp. 1-41, J. EBERSOLT publishes a preliminary account of his mission to Constantinople. This includes a description of the base of Marcian's columns hitherto unpublished, and an illustrated account of a number of churches.

ITALY

ACQUISITIONS OF ITALIAN GALLERIES.—The Museo Civico of Pisa has recently acquired two pictures by Ghirlandaio formerly in the Gesuati Convent in that city. They are described in *Boll. Arte*, III, 1909, pp. 326-339, by A. B. PIETRI, and represent each the Madonna with Saints. The Royal Galleries of Venice have acquired a sculptured wooden altar-piece



FIGURE 6.—SIGNATURE
 OF THE HAUSBUCH-
 MEISTER.

by Bartolomeo Giolfino da Verona, signed and dated 1470 (described by G. FAGOLARI, *Boll. Arte*, 1909, pp. 387-398). In the Florence Academy a new room has been arranged, conducting to the *Sala del David*, in which have been placed the unfinished Prisoners of the Villa Boboli, the "Genius subduing Matter," and the St. Matthew of Michelangelo. (C. D., *Chron. Arts*, 1909, p. 264.)

COMO. — **Paintings.** — In *R. Arch.* XIV, 1909, p. 149, S. R(EINACH) mentions the following paintings at Como: (1) Giottesque frescoes in the church of San Abondio, of which an album of good photographs exists at the price of one lira; (2) in the church of San Fedele, under glass, a Virgin and Child between two saints, a fresco which recalls Foppa; (3) in the church of St. Peter, of the eighteenth century, an old copy, in the size of the original, of Titian's "Martyrdom of St. Peter of Verona" which was burnt in 1867.

FLORENCE. — **An Acquisition of the Uffizi.** — The Uffizi gallery has recently acquired a Holy Family by Alessandro Allori. (*Boll. Arte*, III, 1909, p. 238.)

Drawings in the Uffizi. — A series of important drawings by masters of the fifteenth and of the early sixteenth centuries is published in *Boll. Arte*, III, 1909, pp. 373-385, by P. NERINO FERRI. The most interesting are: a Weaver by Paolo Uccello; a Crucifixion by Alessio Baldovinetti; Three Nude Girls by Antonio del Pollaiuolo; a Head of Angel by Verrocchio; a Coronation of the Virgin by Botticelli; a nude male figure lying on his back by Marco Basaiti, and a study for the Crucifixion in the Scuola di S. Rocco, at Venice, by Tintoretto.

A Drawing by Di Credi. — A drawing in the *Biblioteca Marucelliana* at Florence is obviously the sketch for Lorenzo di Credi's well-known tondo of the Madonna in the Uffizi. The finished painting has changed some details and for the worse. (*Boll. Arte*, III, 1909, p. 316.)

Frescoes by Pierino del Vaga. — Vasari's description of Pierino's frescoes in the Palazzo Baldassini enables G. POGGI to identify two frescoes, transferred to canvas, which were recently unearthed in the Uffizi store-rooms. They represent Zaleucus commanding the Blinding of his Son, and Tarquinius Superbus founding the Temple of Jupiter. (*Boll. Arte*, III, 1909, pp. 270-273.)

FONTIGNANO. — **A New Perugino.** — IRÈNE VAVASOUR-ELDER publishes in *Rass. d' Arte*, IX, 1909, p. 121, a fresco in the church of Fontignano, near Perugia, representing the Madonna and Child, which she assigns to Perugino. The fresco is dated by an inscription, 1522, at which time Perugino was living at Fontignano, where he died in 1524.

GUBBIO. — **A Newly Discovered Work by Pietro Lorenzetti.** — An interesting discovery is reported from Gubbio, where the pictures forming the public gallery are in course of being transferred from the Palazzo dei Priori to another palace. Count Umberto Gnoli, sent by the Government to superintend the operations, noticed a triptych containing an oil painting of the seventeenth century, and suspecting that it concealed an earlier work, had it cleaned by Professor Colavieti. Thirteen figures were brought to light which Gnoli unhesitatingly ascribes to Pietro Lorenzetti. The work is said to throw much light upon the history of the school of Gubbio, and to explain the influence exercised over it by the great master of Siena. (*Athen.* October 23, 1909, p. 503.)

LA MARSICA. — **Mediaeval Monuments.** — P. PICCIVILLI describes the monuments of La Marsica in central Italy in an article in *L'Arte*, XII, 1909, pp. 329-348. The most interesting of them are: the little-known wooden doors in S. Maria in Cellio at Carsoli, carved with the Life of Christ and bearing a date in the twelfth century; the thirteenth century Cosmatesque pulpit in S. Pietro at Rocca di Botte; and the pulpit in the church at Corecumello, the work of a certain Stefano da Moscino (Mosciano?) and dated 1267.

LUCCIANO. — **An Adoring Madonna.** — In the church of S. Stefano at Lucciano near Pistoia is a kneeling terra-cotta Madonna (Fig. 7), belonging to a Nativity the other figures of which are gone, which betrays reminiscences of the style of Mino da Fiesole. (A. STANGHELLINI, *Rass. d'Arte*, IX, 1909, p. 158.)

MILAN. — **Acquisitions of the Brera.** — The Brera has recently acquired: an Assumption by Girolamo Marchesi, dated 1513 and bought from an English collection (*London Times*, July 30, 1909); a Madonna and St. John Baptist, and a Madonna with the child John Baptist by Bernardino Licinio; an Allegory of Discipline by Schiavone; a Madonna by Cima da Conegliano; a fragment of a Nativity by Cariani; the Martyrdom of St. Paul (St. Peter?) by a Lombard artist of the sixteenth century; a Holy Family by Civerchio (?); a Nativity by a follower of Gaudenzio Ferrari; a Portrait of a Knight of Malta by Bernardo Strozzi; a Madonna with Saints and Angels of the Verona school; a Madonnas with Saints of the school of the Romagna; and a seventeenth-century drawing of a piazza in Florence. (F. MALAGUZZI VALERI, *Rass. d'Arte*, IX, 1909, pp. 137-144.)

Statues of the Sforzas in Milan Cathedral. — In *Rass. d'Arte*, IX, 1909, pp. 109-112, U. NEBBIA identifies the statue of a young knight which stands in the front rank of the statues decorating one of the windows of the north sacristy with Galeazzo Maria Sforza, and the "armed giant" which surmounts the last pier buttress toward the transept, on the south side of the *langhaus*, with his father Francesco.

MONTEFALCO. — **The Frescoes in S. Chiara.** — In *Rass. d'Arte*, IX, 1909, pp. 164-167, L. FIOCCA publishes the frescoes of S. Chiara at Montefalco, concluding that they are the work of an Umbrian artist imitating



FIGURE 7. — KNEELING VIRGIN: TERRACOTTA.

Cavallini, and that they show an affinity to the paintings in the church of S. Domenico in Turin.

PADUA. — **A New Portrait of Donatello.** — The museum at Padua has a new portrait of Donatello painted on wood. The only portrait of this painter previously known is in the Louvre. (*Le Musée*, VI, 1909, p. 159.)

ROME. — **Discoveries under the Pavement of St. Peter's.** — The renewal of the marble pavement of the chapel of St. Petronilla has brought to light a number of fragments belonging to the old basilica which had been utilized as building material. Among these is one sculptured fragment of a good classic period, and another of Byzantine or Romanesque sculpture which must have been part of an *antependium* belonging to an altar. (*Chron. Arts*, 1909, p. 239.)

The Future Aspect of the Baths of Diocletian. — C. Ricci publishes in *Boll. Arte*, III, 1909, pp. 361-372, a series of views of the Baths of Diocletian from the sixteenth to the eighteenth century, showing the respect to the ruins which was manifested by Michelangelo when he built within them the church of S. Maria degli Angeli. Ricci announces that the reconstruction of the Terme will restore as nearly as possible the aspect which Michelangelo left to the ruins, by removing the masking façade of Vanvitelli on the southwest, reopening the original entrance to the church on the southeast, destroying later additions, and leaving the ruins in their magnificent nudity.

An Important Inscription. — M. COLAGROSSI publishes in *N. Bull. Arch. Crist.* 1909, pp. 51-65, the following epitaph found in the cemetery of St. Sebastian or *ad catacumbas* on the Appian Way:

*Hic requiescit . . . tituli SCOR IOHANNIS ET PAVLI TE QVERVNT
ma GNALIA XPO TV LXXV AN IN ECCLESIA
DEP. IIII KAL. APRILIS POST CONS
PAULINI IVN*

The date is the rare one of 535, and the first line shows that the deceased belonged to the clergy of the *Titulus Byzantii*, or the church of Sts. John and Paul on the Caelian Hill. This indicates that this church was entrusted with the care of the cemetery *ad catacumbas*, as the *titulus Fasciolae* governed the cemetery of Domitilla.

A New Fiorenzo. — A. VENTURI publishes in *L'Arte*, XII, 1909, pp. 317-318, a St. Sebastian in the Spada gallery in Rome, which he attributes to the primitive period of Fiorenzo di Lorenzo.

A Unique Epiphany. — In *N. Bull. Arch. Crist.* 1909, pp. 67-70, C. W. LAMBERTON reproduces a fragment of a sarcophagus cover in the Villa Pamphilj at Rome, on which an Epiphany is represented. It is singular in that the Virgin is represented as reclining on a bed.

SIENA. — **Naddo Ceccarelli.** — To the two pictures assigned to Naddo Ceccarelli, the follower of Simone Martini, F. MASON PERKINS, in *Rass. d' Arte Senese*, 1909, pp. 5-14, adds a polyptych representing the Madonna, Saints, and Angels in the Siena gallery, there attributed to Bartolommeo di Nutino, a Madonna belonging to H. P. Horne, and another in the gallery at Buda Pesth, there ascribed to Lippo Memmi.

TIVOLI. — **Frescoes in S. Silvestro.** — By the accidental fall of some plaster in the apse of the church of S. Silvestro at Tivoli, the original decoration was discovered. The removal of the plaster disclosed a fresco of the Madonna, flanked by figures of prophets with heads of monks below. The frescoes are ascribed to the eleventh century. (*Boll. Arte*, III, 1909, p. 339.)

VENICE. — **Important Paintings discovered.** — Repairs to the interior of the church of S. Giuliano between 1830 and 1840 caused the removal of a number of canvases which were rolled up, deposited in a ceiling of the church, and then forgotten. Recently brought to light, they prove to be a Calvary by Tintoretto, a Resurrection and an Ecce Homo by Palma Giovane, two organ-wings with the figures of Sts. Jerome and Theodore by Andrea Mantegna, a Gethsemane and a Washing of Feet by Giovanni Fiammengo, a Deposition, a Christ before Caiphas, a Crowning with Thorns, and a Flagellation by Leonardo Corona. The pictures by Tintoretto and Palma are in bad condition. (*Rass. d' Arte*, IX, 1909, Aug.-Sep. p. ii.)

SPAIN AND PORTUGAL

CARMONA. — **A Visigothic Calendar.** — In the *Boletin de la Real Academia*, 1909, pp. 34 ff., 273 ff., Padre Fidel Fita has published and discussed a Visigothic calendar discovered by Mr. Bonsor at Carmona. It is engraved on a marble column, probably originally Roman. It gives the liturgical calendar from December 25 to June 24. The date is before 633 A.D. Text and summary notes are given by S. R., *R. Arch.* XIV, 1909, p. 283.

TOLEDO. — **Discovery of a Greco.** — In one of the structures connected with the church of S. Leocadia a painting signed by El Greco has been discovered, which represents the Immaculate Conception. (*Chron. Arts*, 1909, p. 239.)

LISBON. — **A Portuguese Primitive.** — H. Cook publishes in *Burl. Mag.* XV, 1909, pp. 232-237, four panels of a triptych from the monastery of San Vicente which belong to the Portuguese school of the middle of the fifteenth century.

FRANCE

AUTUN. — **Burgundian Art in the Musée Rolin.** — In *Gaz. B.-A.* I, 1909, pp. 406-420, there is a sketch by A. GERMAIN of the works of art dating from the twelfth century and later, which are collected in the provincial museum of Autun.

AVRANCHES. — **Romanesque Miniatures.** — No. 210 of the manuscripts in the library of Avranches is a *cartularium* of the Abbey of Mont-Saint-Michel containing four miniatures in outline drawing which belong to the original portion of the manuscript, dating from the twelfth century. They represent the Vision of St. Aubert (the founder of the monastery), the Donation of Richard II, Duke of Normandy, the Donation of the Duchess Gonor (second wife of Richard II), and the Donation of Robert the Devil. Norman miniatures being rare, these drawings have a unique importance. (A. BOINET, *Bibliothèque de l'École de Chartres*, 1909, pp. 334-343.)

LA GRAULIÈRE (CORRÈZE). — **A New Romanesque Motif.** — One of the subjects carved on the portal of the small twelfth-century church in the village of La Graulière is a bearded man carrying a huge fish on his right shoulder. This may be Tobias, but may also represent one of the

torments of the miser who appears bearing the devil on his back in the scene next to this. A similar combination of devil and man bearing a fish occurs in a window at Mans. (R. FAGE, *B. Soc. Ant. Fr.* 1909, p. 173.)

PARIS.—**A Miniaturist of 1351.**—H. MARTIN in *Gaz. B.-A.* II, 1909, pp. 89–102, gives an account of the illustrations of a manuscript in the Bibliothèque de l'Arsenal. It is a Quest of the Holy Grail, illuminated in 1351 by Pierart dou Tielt, as the inscription at its close informs us. Names of fourteenth-century artists are rare in the North. This one evidently came from Thielt in Flanders, but the style of the miniatures and other evidence assigns the work to the Tournay school. The most remarkable feature of the illumination is the genius for caricature shown in the fantastic scenes in the borders.

An Acquisition of the Louvre.—The Louvre has recently acquired a Portrait of Pierre Qutte by François Clouet which is described in *Monatshefte f. Kunstwiss.*, II, 1909, pp. 356–367, by L. M. RICHTER. He adds a discussion of French sixteenth-century portraiture, and concludes that the style is of local origin.

BELGIUM

BRUGES.—**The Signature of Louis van Boshem.**—F. DE MÉLY has found in one of the miniatures of a small Book of Hours in the seminary of Bruges the signature: *Jusque-à-la | fin- | Louwigh-van | Boshem.* The miniatures are much like little reliefs and architectural ornament, as is to be expected from the artist who was the architect of the famous monument of Brou. (*B. Soc. Ant. Fr.* 1909, p. 157.)

GERMANY

AUGSBURG.—**Windows by Holbein the Elder.**—P. DIRR in *Mün. Jb. Bild.* K. 1909, pp. 33–45, describes the windows in the collection of the *Pfarrhof* of St. Ulrich at Augsburg representing an Adoration of the Magi, formerly in St. Ulrich's, and finds that they were done after Holbein's drawings of the same subject in Basel. The windows, moreover, were painted by the artist himself. Other windows from the same church are from the master's hand, e.g. the Madonna in the Sacristy, formerly in the window of the *Abtkapelle* and a St. Ursula in the Pfarrhof museum.

BERLIN.—**Acquisitions of the Kaiser-Friedrich Museum.**—This museum has recently added to its collections: a predella by Fra Angelico, the Funeral of St. Francis; and another by Benozzo Gozzoli, A Miracle of St. Zenobius. (SCHOTTMÜLLER in *Ber. Kunsts.* XXX, 1909, cols. 233–237.)

Pictures of the Spanish Quattrocento.—V. von LOGA and E. BERTAUX publish in *Jb. Preuss. Kunsts.* 1909, pp. 179–192, two works, one of which, a St. Peter enthroned in the Kgl. Kunstgewerbemuseum, is clearly the work of Jacomart Baçó. The other work consists of two wings of a triptych, the central panel of which, representing St. George with a female figure, is in the possession of Don E. Cabot in Barcelona. The wings have kneeling figures of the donors, who are (according to von Loga) John, King of Castile and Leon, and his Queen, Maria, together with their patrons, John Baptist and St. Louis of Toulouse. Bertaux assigns the triptych to the atelier of Jaime Huguet.

Two Mediaeval Statues.—F. WOLFF publishes for the first time in *Monatshefte f. Kunstwiss.* II, 1909, pp. 447-453, two statues of the fourteenth century. The one is a Madonna which is apparently by the same hand as another Madonna in Magdeburg Cathedral. The other is a product of the lower Rhenish school, the figure of a bishop. Both figures are in the Märkisches Museum in Berlin.

MUNICH.—**A Drawing by Sodoma.**—O. WEIGMANN publishes in *Mün. Jb. Bild. K.* 1909, pp. 54-59, a drawing by Sodoma, which he shows to be the study for the Betrothal of St. Catherine in the Galleria Nazionale (Corsini) at Rome.

Perugino's Vision of St. Bernard.—In a study of the history of Perugino's Vision of St. Bernard, published in *Mün. Jb. Bild. K.* 1909, pp. 46-53, G. GRONAU concludes that it was probably painted between 1491 and 1493.

NÜRNBERG.—**A Relief by Hans Schwarz.**—In *Monatshefte f. Kunstwiss.* II, 1909, pp. 393-395. W. VÖGE assigns to Hans Schwarz a small stone relief in the Germanic museum at Nürnberg, known as the Madonna of the Cherub.

HUNGARY

HUNGARY.—**Works by Andrea Ferrucci.**—Of the two monuments which Vasari says that Ferrucci constructed in Hungary, one still exists, viz., the altar in the chapel of Cardinal Bakocz in the church of St. Adalbert at Strigonia. Vasari calls it a *sepoltura*, misled, no doubt, by the fact that the cardinal was buried at the foot of the altar. The figures with which Ferrucci ornamented its niches have perished; but of the original ornament there remain two half-figures of evangelists, and the relief of the Annunciation at the top flanked by kneeling angels in the round. Ferrucci has left another example of his work in Hungary, in the tabernacle of the sacrament in the cathedral at Fünfkirchen. (C. VON FABRICZY, *L'Arte*, XII, 1909, pp. 302-307.)

RUSSIA

ST. PETERSBURG.—**The Exposition of Paintings.**—The Russian art review, *Starje Godij*, inaugurated last year an exposition of pictures in St. Petersburg collections, which is described in *L'Arte*, XII, 1909, pp. 216-231, by P. P. WEINER (see *A.J.A.* XIII, 1909, p. 384). The excellence of the exposition is the more remarkable that it did not include the collections of Semenoff-Tianschausky, of the Count Stroganoff, or that of the Leuchtenbergs. The most interesting pieces are: a Madonna by Cima da Conegliano in the Kotchoubey collection; a Coronation of the Virgin, attributed to Simone Martini (which the editors of *L'Arte*, in a note, ascribe to Bernardo Daddi), and belonging to Baron Meyendorff; and particularly a Madonna of the school of Leonardo, belonging to Madame Bénos.

GREAT BRITAIN

CAMBRIDGE.—**A Little-known Painting by Simone Martini.**—F. MASON PERKINS publishes in *Rass. d'Arte Senese*, 1909, pp. 3-5, a triptych representing in the centre St. Michael and on the wings two bishops, probably Sts. Augustine and Ambrose, with angels in the little gables at

the top. All are half-figures. The triptych is assigned to Simone on internal grounds.

LONDON. — **An Acquisition of the National Gallery.** — The National Gallery has acquired the "Norfolk Holbein," a portrait of Christine of Denmark, wife of Francesco II, Sforza. (*Rass. d' Arte*, June, 1909, p. iv.)

A Work by Jacques Daret. — In a very interesting study in *Burl. Mag.* XV, 1909, pp. 202-208, G. H. DE Loo shows that a panel of a triptych, representing the Presentation in the Temple, now in the possession of Duveen Brothers, is a work of Jacques Daret, painted in 1434. The other two panels are in the Berlin museum.

The Burlington Codex. — The collection of drawings by Palladio which was made by Lord Burlington in the eighteenth century, belongs now to the Duke of Devonshire, who has lent it to the Library of the Royal Academy of British Architects in London. The first seven volumes contain the drawings of the Roman Thermae, already published by Burlington. The others contain a miscellany, the most interesting pieces of which are Palladio's sketches for his own buildings. One sketch shows that he drew his conception for his villas from Roman remains (e.g. the Rotonda of the Villa Mario Capra from the Thermae of Caracalla). The ninth volume contains a comprehensive reconstruction of the *Templum Fortunae* at Praeneste. The sketches of one series are the preliminary drawings for the illustrations of his *Libro dell' Architettura*. The great majority of the drawings are of undoubtedly authenticity, but here and there some are found which have nothing to do with Palladio. (F. BURGER, *Rep. f. K.* XXXII, 1909, pp. 327-330.)

OLD SARUM. — **Recent Excavations.** — From August 23 to November 5, 1909, the Society of Antiquaries carried on excavations in the castle area at Old Sarum, about one and three-quarters miles north of Salisbury. The entrance was cleared and, on the opposite side of the bailey, a "block" 80 feet long, containing four chambers, was uncovered. This is still 20 feet high. Above two of the chambers was a tower 40 feet square, identified as the "tower above the postern." The latter consisted of a narrow passage through the rampart, defended by inner and outer doorways, and opening originally upon a wooden bridge across the ditch leading from the outer bailey. Much time was spent clearing the inner bailey. Part of a Roman hand-mill and fragments of Roman tiles indicate that remains of the original building will be found. It is estimated that it will take eight or ten years to complete the excavation. (*London Times*, November 17, 1909.)

AFRICA

THELEPTE. — **A Christian Vase.** — In *C. R. Acad. Insc.* 1909, pp. 597-605 (4 figs.), Dr. CARTON publishes a Christian vase found at Thelepte, in Tunis, upon which is represented in relief the martyrdom of a Christian in the circus. It bears the inscription *Saturninus ex of(f)icin(a)*. Such vases are very rare.

TUNIS. — **Christian Inscriptions.** — In *B. Soc. Ant. Fr.* 1909, pp. 157-158, 189-190, 191-194, 199-201, 210-216, 217-219, and 224-226, P. MONCEAUX publishes twenty-five early Christian inscriptions from different sites in Tunis.

UNITED STATES

ITALIAN PICTURES IN AMERICAN GALLERIES.—In *Rass. d' Arte*, IX, 1909, pp. 145-148, F. MASON PERKINS writes of the following Italian works in this country: an Assumption by Luca di Tommé in the Jarves collection at New Haven; the St. John Evangelist by Liberale da Verona in the Johnson collection at Philadelphia; a S. Niccolò da Tolentino by Fiorenzo di Lorenzo in the same collection; an Annunziata by Mariotto Albertinelli, belonging to S. Untermyer of Yonkers, N. Y.; and a Madonna by Francesco Napoletano in the Morison collection at Boston.

WORKS BY EL GRECO.—In *Z. Bild. K. N. F.* XX, 1909, pp. 20-24, M. H. BERNATH describes three paintings by El Greco in American collections: the Assumption in the Chicago Art Institute; the Adoration of the Magi in the Metropolitan Museum at New York; and the portrait of Fray Palavicino in the Boston Museum of Fine Arts.

BOSTON.—**Acquisitions of the Museum of Fine Arts.**—In *Rass. d' Arte*, IX, 1909, pp. 169-171, J. BRECK describes some of the recent acquisitions of the Boston Museum of Fine Arts in the field of Italian art, which were on exhibition in the Fogg Museum. The most important are: a Madonna by Taddeo di Bartolo; a St. Jerome by Matteo di Giovanni; a Madonna and Angels by Spinello Aretino; an Adoration of the Magi by Cosmè Tura; a Madonna by Bruozzo Gozzoli; and a Sacrifice of Cain and Abel by Fra Bartolomeo.

DETROIT.—**Acquisitions of the Museum of Art.**—Mrs. Harriet J. Scripps has presented to the Detroit Museum of Art fifteen "old masters," of which the most important are: a Crucifixion attributed to Perugino; a St. Francis of Assisi by Murillo; a Repose of a Hawking Party by Philip Wouwermans; a Madonna attributed to Correggio; a Battle Scene by Jacques Courtois; and an Annunciation assigned to Gerard Dou. (*Bull. Detroit Mus. of Art*, 1909, pp. 46-50.)

NEW YORK.—**Acquisitions of the Metropolitan Museum.**—Recent accessions to the Metropolitan Museum are: a Virgin and Child by Lorenzo Monaco (*B. Metr. Mus.* 1909, pp. 141-143); a Portrait of Erasmus by Hans Holbein (loaned by J. P. Morgan, *ibid.* p. 139); tapestries of the fifteenth and sixteenth centuries from the Hoentschel collection (loaned by J. P. Morgan, *ibid.* pp. 149-152); a Madonna by Bartolomeo Montagna (c. 1490, *ibid.* pp. 156-157); a tondo by Lorenzo di Credi, Virgin adoring the Child (*ibid.* pp. 186-188); a Head of Putto, fragment of an altar relief by Antonio Rossellino; a bronze Reclining Putto by Verrocchio; two terracotta reliefs of the fifteenth century, one by the Master of the Pellegrini Chapel; a fourteenth-century marble Madonna (*ibid.* pp. 206-208); and a number of examples of Romanesque sculpture (*ibid.* pp. 208-209).

WORCESTER.—**The "Master of the Dying Cato."**—This is the title given to an unknown Italian master of the seventeenth century by H. Voss, who now adds to the few works he has been able to assemble around the "Dying Cato" a Christ among the Doctors, in the museum at Worcester. (*Monatshefte f. Kunstwiss.* II, 1909, pp. 400-401.)

AMERICAN ARCHAEOLOGY
GENERAL AND MISCELLANEOUS

THE MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—At the meeting of the British Association for the Advancement of Science held at Winnipeg, August 25 to September 1, 1909, the following papers were read in the field of American archaeology: Miss A. C. BRETON on 'Race-types in the Ancient Sculptures and Paintings of Mexico and Central America,' distinguishing the tall, slender race of warriors and priests from that of the captives; and on 'Arms and Accoutrements of the Ancient Warriors at Chichen Itza'; G. B. GORDON, a review of the work being done by the principal institutions of learning in the country; E. G. PERRY on some copper implements, one tipped with silver, from a river bed at Fort Francis, Ontario; H. MONTGOMERY, 'The Archaeology of Ontario and Manitoba.' In Ontario are found the usual Eastern remains, "ceremonials," ossuaries, tumuli and pictographs; in Manitoba, tumuli, earthen ridges and house-sites, as well as stone and clay specimens. (G. G. MACCURDY, *American Anthropologist*, N. S. II, 1909, pp. 456-477.)

CONGRESS FOR PREHISTORIC ARCHAEOLOGY.—The sessions of the fifth *Congrès Préhistorique de France* were held at Beauvais from July 26 to July 31, 1909. Much attention was given to the megalithic monuments of France and of other countries; in this connection A. L. LEWIS read a paper on some 'Megalithic Monuments of Ireland.' C. PEABODY represented Harvard University and presented some 'Archaeological Notes on the Extreme Western Portion of Texas.'

ANDOVER.—**Acquisition of a New Collection.**—The Department of Archaeology of Phillips Academy at Andover, Massachusetts, has received as a gift from Professor Williams of Andover, the Steinbruck collection of archaeological material from the Mandan sites of North Dakota. There are in all about nine thousand specimens, and the collection is especially rich in unusual types of bone implements and in the smaller stone objects; among these are rare forms of scrapers, double and single.

CALIFORNIA.—**Ancient Burial Site in Kern County.**—The Museum of the Department of Anthropology of the University of California has come into possession of a collection from an ancient burial site from the southwestern edge of the great San Joaquin Valley, in Kern County, Central California. The human remains indicate partial cremation followed by burial. Their state of preservation displays a hitherto undescribed mode of wrapping the limbs. A piece of Pueblo cloth is perhaps the first positive evidence of direct relations between the Southwest and Central California. Other objects show clearly the former existence in this region of customs and religious practices known in historic times only in Southern California.

CENTRAL AMERICA.—**Explorations.**—Under the auspices of the Peabody Museum of Harvard University A. M. Tozzer and R. E. Merwin left Cambridge in November, 1909, to conduct explorations in Central America during the present season.

LONDON.—**A Collection of Peruvian Antiquities.**—H. T. Myring has recently exhibited in London a remarkable collection of Peruvian

antiquities excavated by him in the Chimcana valley. There are in all about one thousand objects illustrating the civilization of the Chimu people. Vessels with tubular handles are numerous. The heads of the figures and the animals are carefully modelled, but accessories are often merely painted. Many religious objects exhibit the characteristic head-dress of a god and some unmistakably that of the sun-god. (*Athen.* Oct. 16, 1909, p. 467; *Illustrated London News*, Dec. 4, 1909.)

NEBRASKA.—**Discovery of Petroglyphs.**—E. E. Blackman has recently examined a large quartzite boulder at Syracuse, Otoe County, Nebraska, upon which are a number of "turkey tracks." These tracks are six inches long and are made by bruising the quartzite with a heavy instrument; in a few instances they show a very slight depression, but most of them can be distinguished only by the bruised condition of the rock. They may be made out by an observer standing fifty feet away. A careful impression is to be made and the study of the characters is now going on. There are many ordinary Indian pictographs in the state, but these petroglyphs are entirely distinct and appear to be of great age. The Nebraska State Historical Society has lately had made a cast of the granite boulder covered with petroglyphs found near Harrington, Nebraska, in 1869.

NEW MEXICO.—**Excavations at Tyuonyi.**—In *American Anthropologist*, N.S. II, 1909, pp. 434-455 (7 pls.; 17 figs.), E. L. HEWETT discusses the work of the School of American Archaeology during the summer of 1908 in the Rito de los Frijoles. The ancient remains in the Rito consist of four community houses in the valley, one on the mesa rim near the southern brink of the cañon and a series of cliff-houses extending for a distance of a mile and a quarter along the base of the northern wall. Of the community houses the great one of Tyuonyi was the focus of population in the Rito; it was a terraced structure, roughly circular, probably a three-storyed pueblo; a peculiarity is that the walls themselves are curved, whereas usually the curvature is formed by changing the direction from room to room. Several interesting *kivas*, or subterranean tribal sanctuaries, were discovered; a restoration of one of these, the largest *kiva* yet discovered, presents a circular room forty-two feet in diameter and a passageway or entrance leading from a shaft of like height (or depth) with the chamber. The problems connected with burial are not all solved; several burials were discovered by the excavation of trenches in the talus about two-thirds of the way down to the flood plain. The skeletons were found buried separately in the talus and were not accompanied with pottery or utensils.

UTAH.—**A New Museum Building in Salt Lake City.**—It is announced that the material of the Deseret Museum will be installed shortly in a new building now nearing completion.

ABBREVIATIONS

Abh. : Abhandlungen. *Allg. Ztg.* : Münchener Allgemeine Zeitung. *Alt.* : *Or.* : Der alte Orient. *Am. Anthr.* : American Anthropologist. *Am. Archit.* : American Architect. *A.J.A.* : American Journal of Archaeology. *A. J. Num.* : American Journal of Numismatics. *A. J. Sem. Lang.* : American Journal of Semitic Languages and Literature. *Ami d. Mon.* : Ami des Monuments. *Ant. Denk.* : Antike Denkmäler. *Ann. Arch. Anth.* : Annals of Archaeology and Anthropology. *Arch. Ael.* : Archaeologia Aeliana. *Arch. Anz.* : Archäologischer Anzeiger. *Arch. Rec.* : Architectural Record. *Arch. Rel.* : Archiv für Religionswissenschaft. *Arch. Miss.* : Archives de Missions Scientifiques et Littéraires. *Arch. Stor. Art.* : Archivio Storico dell' Arte. *Arch. Stor. Lomb.* : Archivio Storico Lombardo. *Arch. Stor. Patr.* : Archivio della r. società romana di storia patria. *Athen.* : Athenaeum (of London). *Ath. Mitt.* : Mitteilungen d. k. d. Archaeol. Instituts, Athen. Abt.

Beitr. Assyr. : Beiträge zur Assyrologie. *Ber. Kunsts.* : Amtliche Berichte aus den Königlichen Kunstsammlungen. *Berl. Akad.* : Preussische Akademie der Wissenschaften zu Berlin. *Berl. Phil. W.* : Berliner Philologische Wochenschrift. *Bibl. Stud.* : Biblische Studien. *Bibl. World.* : The Biblical World. *B. Ac. Hist.* : Boletin de la real Academia de la Historia. *Boll. Arte* : Bollettino d' Arte. *Boll. Num.* : Bollettino Italiano di Numismatica. *Bonn. Jb.* : Bonner Jahrbücher : Jahrbücher des Vereins von Altertumsfreunden im Rheinlande. *B.S.A.* : Annual of the British School at Athens. *B.S.R.* : Papers of the British School at Rome. *B. Arch. M.* : Bulletin Archéol. du Ministère. *B. Arch. C. T.* : Bulletin Archéologique du Comité des Travaux hist. et scient. *B.C.H.* : Bulletin de Correspondance Hellénique. *B. Inst. Eg.* : Bulletin de l'Institut Egyptien (Cairo). *B. Metr. Mus.* : Bulletin of the Metropolitan Museum of Art, New York. *B. Mus. Brux.* : Bulletin des Musée Royaux des arts décoratifs et industriels à Bruxelles. *B. Mus. F. A.* : Museum of Fine Arts Bulletin, Boston. *B. Num.* : Bulletin de Numismatique. *B. Soc. Ant. Fr.* : Bulletin de la Société des Antiquaires de France. *B. Soc. Anth.* : Bulletin de la Société d'Anthropologie de Paris. *B. Mon.* : Bulletin Monumental. *B. Com. Rom.* : Bulletino d. Commissione Archeologica Comunale di Roma. *B. Arch. Crist.* : Bulletino di Archeologia Cristiana. *B. Pal. It.* : Bulletino di Paletnologia Italiana. *Burl. Gaz.* : Burlington Gazette. *Burl. Mag.* : Burlington Magazine. *Byz. Z.* : Byzantinische Zeitschrift.

Chron. Arts. : Chronique des Arts. *Cl. Phil.* : Classical Philology. *Cl. R.* : Classical Review. *C. R. Acad. Insc.* : Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres. *C.I.A.* : Corpus Inscriptionum Atticarum. *C.I.G.* : Corpus Inscriptionum Graecarum. *C.I.L.* : Corpus Inscriptionum Latinarum. *C.I.S.* : Corpus Inscriptionum Semiticarum.

'Εφ. Αρχ. : *'Εφημερίς Αρχαιολογική.* *Eph. Ep.* : Ephemeris Epigraphica. *Eph. Sem. Ep.* : Ephemeris für Semitische Epigraphik. *Exp. Times* : The Expository Times.

Fornvännen : Fornvännen: meddelanden från K. Vitterhets Historie och Antikvitets Akademien.

Gaz. B.-A. : Gazette des Beaux-Arts. *G.D.I.* : Sammlung der griechischen Dialekt-Inscriptions.

I.G. : Inscriptiones Graecae (for contents and numbering of volumes, cf. *A.J.A.* IX, 1905, pp. 96-97). *I.G.A.* : Inscriptiones Graecae Antiquissimae, ed. Roehl. *I.G. Arg.* : Inscriptiones Graecae Argolidis. *I.G. Ins.* : Inscriptiones Graecarum Insularum. *I.G. Sept.* : Inscriptiones Graeciae Septentrionalis. *I.G. Sic. It.* : Inscriptiones Graeciae Siciliae et Italiae.

Jb. Arch. I. : Jahrbuch d. k. d. Archäol. Instituts. *Jb. Kl. Alt.* : Neue Jahrbücher für das klassische Altertum, Geschichte und deutsche Litteratur und für Pädagogik. *Jb. Kunsth. Samm.* : Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses. *Jb. Phil. Päd.* : Neue Jahrbücher für Philologie und Pädagogik (Fleckeisen's Jahrbücher). *Jb. Preuss. Kunsts.* : Jahrbuch d. k. Preuss. Kunstsammlungen. *Jh. Oest. Arch. I.* : Jahreshefte des öesterreichischen Archäologischen Instituts. *J. Asiat.* : Journal Asiatique. *J.A.O.S.* : Journal of American Oriental Society. *J. B. Archaeol.* : Journal of the British Archaeological Association. *J. B. Archit.* : Journal of the Royal Institute of British Architects. *J. Bibl. Lit.* : Journal of Biblical Literature. *J.H.S.* :

Journal of Hellenic Studies. *J. Int. Arch. Num.* : Διεθνής Εφημερίς τῆς νομισματικῆς ἀρχαιολογίας, Journal international d'archéologie numismatique (Athens).

Kb. Gesammelte. : Korrespondenzblatt des Gesammtvereins der deutschen Geschichts- und Altertumsvereine. *Klio* : Klio: Beiträge zur alten Geschichte. *Kunstchr.* : Kunstchronik.

Mb. Num. Ges. Wien : Monatsblatt der Numismatischen Gesellschaft in Wien. *Mh. f. Kunstu.* : Monatshefte für Kunsthissenschaft, *Mél. Arch. Hist.* : Mélanges d'Archéologie et d'histoire (of French School in Rome). *Mél. Fac. Or.* : Mélanges de la Faculté Orientale, Beirut. *M. Acc. Modena* : Memorie della Regia Accademia di scienze, lettere ed arti in Modena. *M. Inst. Gen.* : Mémoires de l'Institut Genevois. *M. Soc. Ant. Fr.* : Mémoires de la Société des Antiquaires de France. *Mitt. Anth. Ges.* : Mitteilungen der anthropologischen Gesellschaft in Wien. *Mitt. C.-Comm.* : Mitteilungen der königlich-kaiserlichen Central-Commission für Erforschung und Erhaltung der Kunst- und historischen Denkmale. *Mitt. Or. Ges.* : Mitteilungen der deutschen Orient-Gesellschaft. *Mitt. Pal. V.* : Mitteilungen und Nachrichten des deutschen Palestina Vereins. *Mitt. Nassau* : Mitteilungen des Vereins für nassauische Altertumskunde und Geschichtsforschung. *Mitt. Vorderas. Ges.* : Mitteilungen der vorderasiatischen Gesellschaft. *Mon. Ant.* : Monumenti Antichi (of Accad. d. Lincei). *Mon. Plot.* : Monuments et Mémoires pub. par l'Acad. des Inscriptions, etc. (Fondation Plot). *Mün. Akad.* : Königlich Bayerische Akademie der Wissenschaften, München. *Mün. Jb. Bild. K.* : Münchner Jahrbuch der bildenden Kunst.

N. D. Alt. : Nachrichten über deutsche Altertumsfunde. *Nomisma* : Nomisma : Untersuchungen auf dem Gebiete der antiken Münzkunde. *Not. Scav.* : Notizie degli Scavi di Antichità. *Num. Chron.* : Numismatic Chronicle. *Num. Z.* : Numismatische Zeitschrift. *N. Arch. Ven.* : Nuovo Archivio Veneto. *N. Bull. Arch. Crist.* : Nuova Bullettino di Archeologia cristiana.

Or. Lit. : Orientalistische Literaturzeitung. *Or. Lux.* : Ex Oriente Lux.

Pal. Ex. Fund. : Quarterly Statement of the Palestine Exploration Fund. *Πρακτικά* : Πρακτικά τῆς Ἀρχαίας ἀρχαιολογικῆς ἐταιρείας. *Proc. Soc. Ant.* : Proceedings of the Society of Antiquaries.

Rass. d' Arte : Rassegna d' Arte. *Rec. Past.* : Records of the Past. *R. Tr. Eg. Asyrr.* : Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes. *Reliq.* : Reliquary and Illustrated Archaeologist. *Rend. Acc. Lincei* : Rendiconti d. r. Accademia dei Lincei. *Rep. f. K.* : Repertorium für Kunsthissenschaft. *R. Assoc. Barc.* : Revista de la Asociación artístico-archeologica Barcelonesa. *R. Arch. Bibl. Mus.* : Revista de Archivos, Bibliotecas, y Museos. *R. Arch.* : Revue Archéologique. *R. Art Anc. Mod.* : Revue de l'Art ancien et moderne. *R. Art Chrét.* : Revue de l'Art Chrétien. *R. Belge Num.* : Revue Belge de Numismatique. *R. Bibl.* : Revue Biblique Internationale. *R. Ép.* : Revue Épigraphique. *R. Ét. Anc.* : Revue des Études Anciennes. *R. Ét. Gr.* : Revue des Études Grecques. *R. Ét. J.* : Revue des Études Juives. *R. Hist. Rel.* : Revue de l' Histoire des Religions. *R. Num.* : Revue Numismatique. *R. Or. Lat.* : Revue de l' Orient Latin. *R. Sém.* : Revue Sémitique. *R. Suisse Num.* : Revue Suisse de Numismatique. *Rh. Mus.* : Rheinisches Museum für Philologie, Neue Folge. *R. Abruzz.* : Rivista Abruzzese di Scienze, Lettere ed Arte. *R. Ital. Num.* : Rivista Italiana Numismatica. *R. Stor. Ant.* : Rivista di Storia Antica. *R. Stor. Calabr.* : Rivista Storica Calabrese. *R. Stor. Ital.* : Rivista Storica Italiana. *Röm.-Germ. Forsh.* : Bericht über die Fortschritte der Römisch-Germanischen Forschung. *Röm.-Germ. Kb.* : Römisch-Germanisches Korrespondenzblatt. *Röm. Mitt.* : Mitteilungen d. k. d. Archäol. Instituts, Röm. Abt. *Röm. Quart.* : Römische Quartalschrift für christliche Altertumskunde und für Kirchengeschichte.

Sächs. Ges. : Sächsische Gesellschaft (Leipzic). *Sitzb.* : Sitzungsberichte. *S. Bibl. Arch.* : Society of Biblical Archaeology, Proceedings.

Voss. Ztg. : Vossische Zeitung.

W. kl. Phil. : Wochenschrift für klassische Philologie.

Z. D. Pal. V. : Zeitschrift des Deutschen Palestina Vereins. *Z. Aeg. Sp. Alt.* : Zeitschrift für Aegyptische Sprache und Altertumskunde. *Z. Alttest. Wiss.* : Zeitschrift für alttestamentliche Wissenschaft. *Z. Assyr.* : Zeitschrift für Assyriologie. *Z. Bild. K.* : Zeitschrift für Bildende Kunst. *Z. Ethn.* : Zeitschrift für Ethnologie. *Z. Morgenl.* : Wiener Zeitschrift für die Kunde des Morgenlands. *Z. Morgenl. Ges.* : Zeitschrift der deutschen Morgenländischen Gesellschaft. *Z. Mün. Alt.* : Zeitschrift des Münchener Alterthumsvereins. *Z. Num.* : Zeitschrift für Numismatik.